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INDEPENDENT STUDY AT THE COLLEGE LEVEL.

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A PROGRAM OF INDEPENDENT STUDY WAS DEVELOPED FOR COURSES IN THE PSYCHOLOGICAL FOUNDATION OF EDUCATION REQUIRED IN A TEACHER EDUCATION PROGRAM. THREE GROUPS OF STUDENTS PARTICIPATED IN THIS PROGRAM OF FOUR COURSES--(1) HUMAN LEARNING, (2) CHILD DEVELOPMENT, (3) PERSONALITY, AND (4) EVALUATION. ONE GROUP WAS ASSIGNED, A SECOND VOLUNTEERED, AND A THIRD PARTICIPATED IN A SEMINAR DESIGNED TO FACILITATE TRANSFER FOLLOWING COMPLETION OF THE PROGRAM. CONVENTIONAL CLASS STUDENTS SERVED AS CONTROLS. A COMPARISON WAS MADE OF THE EFFECTIVENESS AND EFFICIENCY OF INDEPENDENT STUDY WITH CONVENTIONAL CLASS INSTRUCTION, AND AN ATTEMPT WAS MADE TO IDENTIFY CORRELATES OF SUCCESS IN EACH PROGRAM. NO SIGNIFICANT DIFFERENCES IN GRADES RECEIVED OR IN SCORES ON TESTS OF RETENTION AND TRANSFER WERE REVEALED AMONG ANY OF THE GROUPS. STUDENTS JUDGED THE INDEPENDENT STUDY TO BE MORE EFFICIENT THAN CONVENTIONAL CLASSES. (GD)

INDEPENDENT STUDY AT THE COLLEGE LEVEL

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Western Washington State College

Bellingham, Washington

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I. INTRODUCTION

The present study is concerned with the effectiveness of one type of independent study as a method of instruction in educational psychology courses at the college level. The study was conducted as an attempt to develop an instructional approach which would allow the student greater flexibility of learning method and greater flexibility in the scheduling of individual study time than the conventional lecture-discussion class. It was hypothesized that if the intended end product of learning in specific courses could be defined for the student and for the instructor, and if the student could then decide with guidance how he could best make use of the resources of the institution, then some students would be able to attain course objectives more efficiently by studying independently than by conventional classes. In addition, by correlation of pre-test information with performance in independent study it might be possible to identify factors which could be sufficiently predictive of success in independent study to warrant advising students to choose this instructional approach where possible. A third purpose of the investigation was to determine whether independent study, if effective in producing intended learning outcomes, would result in more efficient utilization of instructional staff.

Conventional methods of college instruction, such as the lecture or lecture-discussion class, which are almost always scheduled within a quarter or semester block of time, allow for only modest recognition of individual differences in learning rate or initial level of knowledge of course content. Independent study, in its various forms, offers one possibility of an instructional approach which could provide a more efficient learning environment for some students and which might enable more efficient use of instructor time. If some students can attain the objectives of a course with only limited contact with an instructor and with more efficient use of study effort than present approaches make possible, then it should be possible for fewer instructors, using their efforts to better advantage, to provide for an equal or better quality of education for more students.

A. Selected Research[1]

Independent study may occur in a variety of forms, ranging from individually originated research conducted under the direction of an instructor, to a highly directed form of study in which the learner follows a prescribed syllabus or study guide with readings and very limited if any, contact with an instructor. Beggs and Buffie (1), Dearing (2), and Bonthius and associates (3), have provided extensive reviews of the various approaches to independent study which have been utilized.

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[1] An extensive annotated bibliography on independent study has been prepared by the Stanford University School of Education which includes seventy-five references current through June, 1966.

Although considerable research has been conducted with various instructional approaches, the superiority of this method of instruction over another in contributing to learning has not been demonstrated unequivocally. The importance of frequent student-teacher contact has received little support from research. Studies of this variable have eliminated classes for a period during the term (11), established some form of tutoring (7), and have eliminated all student-teacher contact (12). Others have examined the effects of formal time structure as a crucial variable (4). None of these efforts have demonstrated consistently the importance of teacher contact or formal structure as a primary determinant of study achievement.

Investigation of independent study at Antioch College indicates that students of various levels of ability profit significantly from working independently (1). Similar conclusions were reached by Bonthius in reviewing programs of independent study throughout the United States (3). It has been suggested that the factors determining success in independent study are related to attitudes, motivation, and other personality traits, rather than to academic ability alone (1). However, no consistent significant relationships have been disclosed between personality variables and student achievement or acceptance of independent study (9).

The results of previous investigations indicate that some students learn more efficiently by various forms of independent study than by traditional classes, that independent study in some forms results in a reduction in instructional and learner time with no loss in level of learning, and, in addition, may allow a shifting of instructional effort to subtler objectives than the dissemination of information.

McKeachie (10), in reviewing the research related to the efficiency of independent study procedures, has concluded generally that the more student centered methods of learning, including independent study, tend to encourage greater gains in insight and problem solving skills, and tend to promote more attitudinal changes than comparable in more instructor-centered approaches. However, instructor-centered methods, including lecture-discussion and directed reading with a prescribed syllabus, tended to produce more gains in information and somewhat better performance on conventional tests of subject mastery.

B. Objectives

The primary purpose of the present study was to develop a program of independent study for the courses in educational psychology required in the teacher education program at Western Washington State College, and to compare the effectiveness of this approach to the conventional class approach traditionally employed. A second objective was to examine possible correlates of success in independent study and conventional classes with the intent of identifying measures regularly available or easily obtained for entering students which could be used in the guidance of students into the instructional approach which offered the greatest probability of success. A third important objective was to determine whether the independent study approach would enable more efficient utilization of staff without any corresponding loss in student achievement.

Three different conditions of involvement in independent study were examined. One group of students was assigned to independent study. Another subsequent group was allowed to volunteer for the independent study program. A third group drawn from the assigned I-S group, were examined in a seminar which met two hours each week for a period of a quarter following successful completion of the independent study program. The purpose of the seminar was to attempt to facilitate transfer of the content of the courses to educational practices.

Within this framework, several questions were examined:

1. Are there differences in achievement as demonstrated by grades received between students participating in independent study and those participating in conventional classes?

2. Are there differences in retention of the content of the educational psychology courses and in ability to apply psychological background to educational problems between students who have participated in the two programs?

3. Does independent study provide a more efficient learning environment than conventional classes?

4. By correlation of scores from the Washington Pre-College Differential Guidance Test (13) and scores from pre-tests with grades, can factors be identified which would enable prediction of high achievement under either of the instructional approaches?

5. Is it possible through a program of Independent Study for existing staff to provide for the education of larger numbers of students with less staff time and with no loss in student achievement?

6. As a result of experience with such an instructional approach can implications be derived for the subsequent improvement of teaching practices?

II. METHOD

A. Selection of students

In the Fall of 1963, all sophomore students who had declared teacher education as an intended major were assigned randomly to independent study or to conventional classes in educational psychology. The original assigned independent study group consisted of 246 students. Of this original group, 46 have withdrawn or been dropped from school, 32 have transferred to another institution, and 19 have changed majors. At the time of assignment the students were informed that involvement in the experimental program was not mandatory, but that students assigned to conventional classes could not change to independent study. Sixty students originally assigned to independent study have elected to take the conventional class program, leaving 89 of the original 246 still active in the program during their senior year. Of this group 38 have had their graduation delayed for various reasons and are still

participating. The balance of 51 students have completed the entire independent study program and have graduated. This group will be designated Assigned IS.

The original intent of random selection was to establish comparable groups in independent study and conventional classes. Since only 20 per cent of the assigned group have completed the program within the expected three-year period, any assumption of equality of the two groups is unwarranted. This group will be treated separately for a portion of the analysis, however, not as a group comparable in all respects to the conventional class students.

At the beginning of the second year the program students entering the teacher education curriculum either as transfer or as beginning sophomores were allowed to elect independent study or conventional classes. Since that time 474 students have enrolled voluntarily and are involved in all or part of the courses. The majority of the volunteers have completed three or fewer years of college at the time of this report, consequently only 41 of this group have completed the entire program. These students will be designated as Volunteer IS.

Twenty-three of the assigned students have completed independent study and have participated in a seminar two hours a week for one quarter designed to facilitate transfer of the content of the courses to educational practices. This group will be designated as IS Seminar. The seminar group was selected on the basis of the availability of the students, consequently it consisted largely of students who had completed independent study early in their senior year.

The Control Group consists of 66 students who have completed the conventional class program.

B. Procedure

Independent study students were given study guides for each of the four courses which constitute the educational psychology curriculum, schedules of optional lectures offered once each week during the quarter for each of the courses, and schedules of faculty available for individual consultation (Appendix A). The psychology courses with which the program was involved were: Psychology of Adjustment, Human Learning, Child Development, and Measurement and Test Construction. The study guides were designed to communicate the intended learning outcomes of each of the courses and were keyed to readings available in a special reserve collection. In lieu of purchasing texts, students paid a nominal fee from which the reading materials were purchased. The lectures were intended to cover the same content as that provided by the readings, allowing the student to utilize either the readings or the lectures, or both. In addition, designated faculty were available at regular times for individual consultation.

A pre-test relevant to the content of each of the courses was administered to independent study students and to 106 controls selected randomly. Sample items, selected from a pool of approximately 400 items for each course, are provided in Appendix B.

Scores from the Washington Pre-College Differential Guid nce Test (13) routinely available for all entering freshmen at this institution, were collected for both independent study and control students. The scores used were: Reading Comprehension, Vocabulary, Quantitative, Predicted Grade Point in Education, and Predicted All-College Grade Point.

Competency examinations were provided independent study students in each of the courses whenever the student felt he had completed the necessary study. If the student's score was evaluated at a C level or higher, his grade was entered on his transcript for that course. If his grade was below C, the student met with the faculty member responsible for the course at which time specific areas of weakness were indentified and suggestions for study were provided. No indication of failure was noted on his transcript. At a later date, the student could then take another form of the examination, drawn from the same item pool, presumably following additional study. If he failed to score at a C level or above on the second administration, he was advised to enter the conventional class program.

The cut-off points for grade determination were established by using the same items used in the independent study examinations as part of final examinations administered to students previously completing the conventional classes. The level of achievement on these items and grades assigned by the instructors were used to determine the grading standards.

Independent study students were allowed to proceed through the four courses without restriction to any time schedule beyond the requirement of the Department of Education that at least two of the four courses be satisfactorily completed before admission to student teaching, which normally takes place during the senior year.

Shortly before graduation a comprehensive examination was administered to all independent study and control students who had completed all the educational psychology courses by their respective programs, and who had completed student teaching. One portion of the examination was designed to measure retention of the content of the courses, while the second part was designed to measure the student's ability to apply this background in psychology to the solution of teaching problems which were related to psychological concepts. The first portion of the examination was selected from the same pool of items from which the pre-test and competency examinations were drawn. The problem solving portion was developed by several members of the staff and was judged by members of the staff as having logical relevance to the applied situation. At the time of the administration of this examination, the students responded to a brief questionnaire designed to assess their subjective evaluation of the effectiveness of the independent study program and to determine the student's estimate of the time and effort involved. A sample of the final examination and questionnaire is provided in Appendix C.

C. Analysis of the data

Two models were used for the analysis of the data. The Sheffé method of analysis of variance (8) was used to compare scores on pre-tests, Pre-

College Differential Guidance Tests grades for the four courses, and scores on the final evaluation test for the different sub-groups of independent study students and the conventional class control group. The Wherry-Doolittle Test Selection Method (6) was used to correlate Pre-College Differential Guidance Scores and pre-test scores with grades in courses. Subsequently, multiple regression equations were calculated which establish a basis for prediction of success in independent study and conventional class for subsequent students on the basis of the predictor variables indicated.

Programs were written for the IBM 1620 Computer to carry out each of the above statistical analyses.

Those data not amenable to more complex statistical analysis were tabulated and analyzed in light of the questions posed regarding student evaluation of the independent study program, efficiency of student time, and staff utilization.

III. RESULTS

A. Preliminary data

Before presenting data relevant to the major questions upon which the study focused, an examination of the scores from the Washington Pre-College Differential Guidance Test and the pre-tests will provide a basis for determining the initial status of the various groups. Table I provides the mean scores for all groups on the Pre-College Test. None of the differences were significant beyond the .05 level.[1]

Table 1

Washington Pre-College Differential Guidance Test
Mean Scores for All Groups*

		Score				
		Vocabulary	Reading Comp.	Quantitative	Pred. GPA Education	Pred. GPA All-Coll.
Group	N	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
Assigned I.S.	51	49.61	51.36	49.94	2.62	2.56
Volunteer I.S.	41	55.11	49.83	49.06	2.62	2.55
Total I.S.	92	51.44	50.88	49.47	2.62	2.56
I.S.&Seminar	23	50.73	51.13	48.13	2.67	2.59
Conventional Class	66	48.93	47.54	45.61	2.57	2.37

*No group differences on any test were significant beyond the .05 level.

[1]These analyses were conducted by the Sheffe method of analysis of variance (8) which does not readily enable reporting the obtained F value.

Table 2 provides the mean score for all groups on the four pre-tests overing the content of the educational psychology courses, and group ifferences significant beyond the .05 level.

Table 2

Pre-Test Mean Scores for All Groups

Group		Test			
		Personality Adjustment	Learning	Child Development	Measurement
	N	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
Assigned I.S.	51	65.70	48.86	58.64	49.77
Volunteer I.S.	41	71.50	57.34	62.66	52.19
Total I.S.	92	67.93	52.82	60.52	50.87
I.S. & Seminar	23	63.77	49.04	56.68	50.27
Control	66	60.21	44.32	53.68	45.30

Differences Significant Beyond .05 Level

Test	Group		Group
Personality-adj.	Volunteer I.S.	>	Control
	Total I.S.	>	Control
Learning	Vol. I.S.	>	Control
	Vol. I.S.	>	Assigned I.S.
Child Dev.	Total I.S.	>	Control
	I.S. Vol.	>	Control
Measurement	Total I.S.	>	Control
Test Const.	Vol. I.S.	>	Control

B. Achievement Data

Two sets of data provide a basis for comparison of achievement of ndependent study and control students. Table 3 provides the grade point ata for all groups, while Table 4 provides the data from the final compe- ency examination which indicate a measure of retention of course content

and a measure of ability to deal with educational problems.

Table 3

Mean Scores of Grades Received by I.S. and Control Students*

Group		Course			
		Personality Adjustment	Learning	Child Develop.	Measurement Test Const.
	N	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
Assigned I.S.	51	2.58	2.46	2.44	2.51
Volunteer I.S.	41	2.80	2.47	2.70	2.50
Total I.S.	92	2.69	2.46	2.59	2.50
I.S. & Seminar	33	2.56	2.47	2.56	2.60
Control	88	2.52	2.66	2.75	2.45

*No diff. significant beyond .05 level.

Table 4

Final Comprehensive Exam Mean Scores for all Groups*

Group		Score		
		Pt. I Retention	Pt. II Applied	Total Score
	N	$\bar{X}$	$\bar{X}$	$\bar{X}$
Assigned I.S.	31	19.09	19.64	38.74
Volunteer I.S.	37	19.81	19.62	39.43
Total I.S.	68	19.48	19.63	39.11
I.S. & Seminar	22	19.09	20.31	39.40
Control	92	18.56	19.54	38.10

*No group diff. significant beyond .05 level.

C. Predictive Data

The second major question dealt with the correlations between Pre-Test scores and scores from the Washington Pre-College Differential Guidance Test. The Wherry-Doolittle Test Selection Method (6) was utilized to select those predictor tests which yield a maximum R with each criterion and to compute the multiple regression equation from which each criterion can be predicted with the highest precision possible from the predictor variables available. Table 5 provides the R obtained between the combination of tests selected and each criterion, and the Beta Weights obtained from the multiple regression analysis. The complete intercorrelation matrix for all prediction and criteria is provided in Appendix D.

Table 5

Beta Weights and Maximum R of Predictors With Criteria

(I-S. N = 54, Control N = 61)

					Predictors (Beta Weights)								
					Pre-Tests				Wash. Pre-Coll. Test				
	Criteria	Group	R**	σ*	Personality-Adj.	Learning	Child Dev.	Measurement	Reading & Comp.	Vocabulary	Quantitative	Pred. Edu. GPA	Pred. All-Coll.GPA
Grades	Learning	I.S.	.54	.57				.41					.22
		Cont.	.64	.60		.24		.18		-.22		-.28	.06
	Child Dev.	I.S.	.52	.63	.24					.16			.28
		Cont.	.48	.71				.41	-.13			.35	
	Measurement	I.S.	.45	.63	.43		-.33		-.24	.18			.35
		Cont.	.42	.60			.15	.14	-.37				.40
	Total Ed.Psy.	I.S.	.60	.41								.29	.42
		Cont.	.65	.41				.32	-.25				.55

*Predicted standard deviation of the criterion

**All Rs significantly different from zero beyond the .01 level of confidence.

D. Program Efficiency

An important consideration in the evaluation of the independent study instruction program is the efficiency of instructional effort. Table 6 provides the staff allocation to independent study during each of the three years of the program, and the credits actually earned through independent study compared to the usual expectation of credits earned under the instruction of one staff member teaching a full-time load for three academic quarters.

Table 6

Staff Allocation to IS and Credits Earned
by IS Students

Academic Year	Staff Allocated to IS	Total Credits Earned	Av. Credits Earned Under One Inst. Per Year
1963-4	2-1/2	800	1260
1964-5	2	792	1260
1965-6	1	1018	1260

The efficiency and subjective evaluation of independent study as a learning approach was assessed by tabulating the student's responses to the questionnaire administered just prior to graduation. Table 7 provides the students' responses.

Table 7

Student Evaluation of the Efficiency
and Value of Independent Study

Efficiency of Independent Study Compared With Conventional Classes
More Efficient-60 About the Same-15. Less Efficient- 10
Effectiveness of Independent Study as a Learning Environment
More Effective-15 About the same-30 Less Effective-38
Would You Take Another Course by Independent Study?
Yes - 63 No - 19 Depends on the Subject - 7

IV. DISCUSSION

The initial intent of random assignment of students to the independent study program was to establish a group essentially comparable to the control group taking conventional classes. Although the same factors contributing to withdrawal from school, change of major, and transferring to another institution operated on both independent study and conventional class students, the withdrawal of 60 students from the independent study program cast doubt on any subsequent equivalence of the two groups. Table 1 indicates that on each sub-score of the Washington Pre-College Test the conventional class students scored lower than any independent study group, but that none of the differences were significant. Thee difference in performance on the pre-test (Table 2) is considerably more marked, but in no instance does the Assigned I.S. group score significantly lower than the controls. It should be noted, however, that on each sub-score the Assigned I.S. group scored higher than the control group.

Although an analysis of the pre-test and Pre-College data do not provide evidence that the large number of students who withdrew from independent study produced significant inequalities between the two groups, it does indicate that there was a tendency for those students with somewhat less knowledge of psychology and less college aptitude to withdraw from the independent study program after having been assigned. The arguments presented by the students at the time of their withdrawal support this inference. The two most frequent reasons for withdrawal were that the student had little or no background in psychology and was apprehensive of entering an experimental program for his first exposure to the subject, and that the student was experiencing marginal success in college and felt that he might jeopardize his already weak position by entering a new instructional program.

The marked superiority of the Volunteer I.S. group on the pre-tests indicates that this program was most attractive to those students who already had acquired some background in psychology. However, this initial superiority of knowledge did not contribute to significantly higher grades (Table 3), or to significantly higher performance on tests of retention or ability to apply psychological principles to teaching practices (Table 4).

Further examination of Table 4 reveals that there were no differences among any groups with respect to grades received or scores on the comprehensive exam. In general, these data suggest that essentially comparable levels of achievement are attained by groups of students participating in independent study and in conventional classes, and that essentially the same degree of retention is produced by each learning approach. Neither approach is outstanding in the development of ability to transfer content to educational problems. The group participating in the special seminar designed to facilitate transfer demonstrated moderately higher scores on the applied aspect of the final examination, but not significantly higher. The small number of students participating in the seminar, and the structure of the seminar as it was conducted was a serious limitation of this aspect of the study and does not provide a basis for fair evaluation of the possible seminar effects. Subsequent experimentation with the seminar will provide a better basis for evaluation. It should be noted that the observation of no differences between

independent study and conventional class students is generally consistent with the findings of other studies comparing various forms of independent study and class instruction.

Probably the greatest virtue of the independent study approach is that it allows the student who already possesses some of the knowledge of the content of a course to proceed more efficiently to the attainment of course objectives than is possible within the structure of conventional classes. In those situations where minimum levels of acceptable performance can be established and justified as reasonable course objectives, and where adequate measures can be developed, the independent study approach is likely to provide a more efficient learning environment for many students. Student judgment of the program efficiency (Table 7) indicates that 70 per cent of the students who had participated in the program judged independent study to be more efficient than conventional classes; however, only 18 per cent judged it as providing a more valuable learning environment than conventional classes.

The multiple correlations of predictor variables with the criteria of grades yielded correlations significant beyond the .01 level for each analysis (Table 5)[1]. Although significant correlations were obtained between predictors and each of the course grades, and several factors emerged as having high predictive value, the predicted variability of grades in individual courses (from .57 to .71 GPA) is sufficiently large to warrant considerable caution in the advisement of students regarding entrance in any one course on the basis of pre-test or Pre-College scores. Prediction of total grade point in educational psychology appears somewhat more likely. The high correlations obtained (.60 for I.S. group and .65 for control) and the relatively low predicted variability (.41 for both groups) provides considerable basis for prediction of success in the educational psychology curriculum. However there is only limited basis for differential prediction of success in the two programs. The same factor, All-College GPA, emerges as the strongest predictor for both groups, indicating the same factors which contribute to the prediction of all-college grade point, also contribute most heavily to the prediction of success in educational psychology courses regardless of the mode of instruction. In effect, these data indicate that groups of students for whom high performance is predicted are likely to receive high grades under varieties of instructional programs, while prediction of low performance is likely to be followed by low performance. The value of an approach such as independent study is not likely to be that it enables students to reach higher levels of achievement, rather that it allows some students to proceed more efficiently to the attainment of essentially the same level of achievement that would have been attained under conventional classes.

An evaluation of the instructional efficiency of independent study indicates that to this point independent study has been considerably less efficient than conventional class instruction. (Table 6). The allocation of 2-1/2 staff members during the first year of the program was necessary to refine study guides and examinations and to develop the structure of the

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[1]The table of intercorrelations of predictors and criteria for independent study and control students is provided in Appendix D.

program. As the program has stabilized, fewer staff have been necessary and more students have participated. At the present time more than five hundred students are enrolled in one or more courses in independent study. During the academic year 1965-6 the credits earned by independent study with only one staff allocation was nearly the same as credits earned under the conventional class instruction of one instructor. The next year of operation should provide a more definite basis upon which to judge the efficiency of the program. All present indications suggest that independent study will result in more efficient instruction than conventional classes without any corresponding loss in achievement. It can be expected that the first few years of a curricular innovation such as independent study are not likely to show the same effects as a more long-range appraisal.

V. CONCLUSIONS AND IMPLICATIONS

The major conclusion to be derived from the findings is that independent study, in the form described in this report, is equal to conventional class instruction in contributing to student achievement. The learning efficiency of independent study is judged by students who have participated in the program to be considerably greater than conventional classes, although the value of learning by independent study is judged to be somewhat less than by class. Although independent study has not resulted in greater instructional efficiency than conventional classes during the first three years of the program, the trend in the ratio of credits earned to staff load devoted to the program indicates that greater efficiency is likely to result from independent study than from conventional classes.

Participation in a seminar designed to facilitate transfer of the content of the courses to teaching practices has not resulted in an improvement in retention or an increase in ability to transfer. However, the seminar approach has not had a fair trial and subsequent approaches to the seminar may enable different conclusions.

Prediction of differential success in independent study and conventional classes was not possible with the predictors tested. This condition may have resulted from the modest samples of students available this early in the program, by the unfortunate selection of possible predictors, or may indicate that reliable differential prediction of success is not possible. Subsequent tests of the same predictors with larger samples, and of different predictors, may yield different results.

An overall evaluation indicates that the program has sufficient merit to warrant its continuation, especially in those circumstances where minimal levels of competency can be defined and measured adequately. Required courses in a sequence often appear to be suitable to this approach, where the student can proceed to higher levels of learning as rapidly as he can proceed through the sequence.

In some situations independent study may not be warranted for an entire course even though aspects of the course may be suitable to this mode of instruction. An approach to be tried in at least one instance at this

institution involves identifying those objectives of a course which can be identified as largely factual, rote learning, or informational, and preparing independent study materials relevant to these objectives. Other objectives of the course not amenable to precise behavioral definition would be reserved for a discussion approach. Students electing to enter this program would qualify for admission to the class by satisfactory performance on an examination designed to measure the former objectives, after having prepared by the independent study approach. The instructor would then have some assurance of a common background of knowledge in his class and could then devote an abbreviated class to the attainment of the more subtle objectives. Thus a course carrying three credits and normally meeting three hours per week for a quarter might only meet as a class for one hour per week, with the students previously having accomplished roughly two thirds of the objectives via the independent study method. Successful completion of the one hour per week class would entitle the student to three credits and would count as a three hour course toward instructor load. This approach appears to offer some possibilities of even greater flexibility and certainly greater acceptability by faculty than the completely structured approach reported in this paper.

VI. SUMMARY

The purpose of the present study was to develop a program of independent study in courses in psychology required of teachers at this institution, and to compare the effectiveness of this form of independent study with conventional lecture-discussion class instruction. The effectiveness of the independent study approach was determined by comparison of grades received by students participating in the two programs, scores on tests of retention of content and tests of transfer of content to practical teaching situations, judgments of the efficiency and value of the program by students participating, and an examination of the instructional efficiency. In addition, an attempt was made to identify correlates of success in independent study which could serve as useful predictors in advising subsequent students regarding their choice of independent study or conventional classes.

The independent study approach developed was highly directive, involving study guides which were designed to communicate the behavioral objectives of each of the courses, optional lectures, and readings keyed to the guides. In addition, faculty members were available on a regular basis for individual consultation. The student was allowed to demonstrate his competency by examination whenever he had completed the necessary study. If his performance was at a C level or above, he received credit for the course commensurate with his level of achievement. If his performance was below a C level, he was provided study suggestions and allowed to take another form of the examination at a later date.

Three groups of students participated in the program. One group assigned randomly, the second volunteering, and a third which participated in a short seminar designed to facilitate transfer of the course content to teaching practices following successful completion of independent study. Students participating in conventional classes served as controls.

The data indicated that students electing independent study scored significantly higher on pre-tests covering the content of the courses than did control subjects, but that final grades and scores on tests of retention and ability to transfer were not significantly different for any of the groups considered. The major positive factor associated with independent study appeared to be that it allowed students who initially demonstrated some knowledge of course content to proceed more efficiently to the attainment of course objectives. Student evaluation of the program indicated considerably greater efficiency than conventional class instruction, but somewhat lower judgment of value as a learning environment.

Evaluation of instructional efficiency indicated that during the first three years of operation of the program, somewhat less efficiency was demonstrated by independent study than by conventional class instruction. However, the trend in the ratio of student credits earned to staff load indicated that subsequent years will demonstrate considerably greater efficiency than conventional class instruction.

Analysis of correlates of success in the independent study program indicated significant multiple correlations of the predictor variables of pre-test scores and sub-scores of the Washington Pre-College Differential Guidance Test with grades received. However, the predicted variability of the grades in individual courses was large enough to limit prediction of success in specific courses. Prediction of total grade point in educational psychology courses was more strongly supported by the data, however, since the same predictors were revealed for the prediction of success in both independent study and conventional classes, no differential prediction appeared possible.

Implications were provided for the direction which subsequent independent study approaches might take, which included a combination of independent study and conventional small class instruction.

References

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Washington Pre-College Differential Guidance Test. Copyright: 1962 by Educational Testing Service, Princeton, N.J.

APPENDIX A

INDEPENDENT STUDY

Study Guide for Psychology of Adjustment

Introduction to Students:

While preparing this study guide two points were kept in mind, these were: (1) the need to help students transfer the knowledge gained from their study of adjustment to everyday life situations and to future interpersonal relationships in the classroom situation after the student becomes a teacher, and (2) the need to help students differentiate between essential knowledge and information that is good to know, but not essential to the teacher's ability to cope effectively with classroom problems. In order to attempt to accomplish the first objective, we have selected content in terms of its importance to the effectiveness of the classroom teacher.

The second objective of this study guide is accomplished by classifying the information for the students in terms of Essential Knowledge and Important Knowledge. The test covering this area will be designed so there will be questions covering all of the Essential Knowledge and a certain level of competency (around 90%) will be required on these items in order to pass the examination. In order to earn a B or an A grade on the test the student will have to demonstrate understanding of the generalizations reflected under behaviors listed as Important Knowledge in addition to competency on items reflecting essential knowledge.

The last section of this study guide labelled "The Study of Behavior": is designed as a review of the scientific method. The reason it is included in this study guide is because this is the first course in the sequence and the first course in psychology for some of the Independent Study students. Thus, it is important to have an introduction to the scientific method and a review of how it is utilized in the study of behavior for these students. It will also serve as a good review for students who have covered the material in other courses. This material is not classified in terms of the importance of the knowledge since it reflects general information that could be obtained from many sources other than the study of adjustment.

The study guide is set up in terms of questions, grouped under topic headings, that students should be able to answer in order to demonstrate knowledge about the process of adjustment. Before starting a new topic, an introductory statement is made which is designed to orient the student to the new topic. Following this, readings are suggested with the pages indicating where you will find information on the topic being reviewed. Probably the most efficient procedure would be for you to read over the questions on a particular topic before doing any reading. This procedure will orient you to the important points to look for in your reading. This book presents the topic in a different way and provides some unique information that cannot be gained from another source. However, there is also duplication of material in the different sources, so be selective in your reading and do some skimming over the content before starting to read from each suggested reading source. After doing the reading and answering the

questions, look back to the lists of Essential Knowledge and Important Knowledge in order to determine how well you have mastered the material.

The reading assignments should provide the answers to all of the questions. Dr. Elich, Dr. Thompson, and Dr. Lindholm are available in room 200 of Old Main every day during the hours indicated on their schedules as being reserved for Independent Study students. If these hours are not adequate, an appointment can be arranged with the secretary.

READING LIST FOR THE PSYCHOLOGY OF ADJUSTMENT SECTION OF INDEPENDENT STUDY

Instructions:

The following books have been selected for your reading list for the Psychology of Adjustment section of Independent Study. Suggested readings, with page numbers indicated, appear in the study guide at the beginning of each new topic. It is suggested that you briefly review all of these assigned sources. However your reading should be selective because each assigned reading covers the same topic with a difference in emphasis or approach. You will note that there are page numbers indicated after each statement. After finishing your study of a topic, if you are still unable to perform the tasks, read the pages placed after the statement of Expected Behaviors. These pages have been keyed in the following way:

Coleman	- C
Garlow & Katkovsky	- G-K
Kimble & Garmezy	- K-G
Lazarus	- LA
Lundin	- LU
Shaffer & Shoben	- S-S
Thompson	- T

Readings List:

1. Coleman, James C. Abnormal Psychology and Modern Life. Chicago: Scott Foresman, and Co., 1956, Key: C

2. Garlow, Leon, & Walter Katkovsky. Readings in the Psychology of Adjustment. New York: McGraw-Hill Book Co., 1959, Key: G-K

3. Kimble, Gregory A. & Norman Garmezy, Principles of General Psychology. New York: Ronald Press Co., 1963, Key: K-G

4. Lazarus, Richard S. Personality & Adjustment. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963. Key: LA

5. Lundin, Robert W. Personality: An Experimental Approach. New York: Macmillan Co., 1961. Key: LU

6. Shaffer, Laurance F. & Edward J. Shoben. The Psychology of Adjustment. Boston: Houghton Mifflin Co., 1956. Key: S-S

7. Thompson, George G. Child Psychology. Boston, Houghton Mifflin Co., 1962. Key: T

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BEHAVIORS EXPECTED OF A STUDENT AFTER COMPLETING THE ADJUSTMENT SECTION OF INDEPENDENT STUDY

Essential:

Adjustment Concept

1. Be able to define the term adjustment and identify some of the external and internal demands to which a person must adjust. (LA p. 3-5) (C p. 131-144)

2. Give reasons why all behavior, whether successful or unsuccessful in meeting internal and external demands, must be viewed as attempts to adjust. (LA pgs. 147-4148) (G-K pgs. 107-108, pgs. 192-193).

3. Be able to state some of the implications of the fact that each individual acquires many characteristic ways of adjusting through the process of learning. (C p. 84-86) (S-S86-92, 147-148, 157-158, 309) (G-K 191-193)

4. Be able to illustrate that in life stress is inescapable and that adjustment can be viewed only in terms of an individual's adaptation to the stresses. List some of the stresses and common methods of adjusting to them. (C 76-84, 134-135, (T 599-600) K-G 466-472)

5. Be able to identify illustrations of rigidity and flexibility in behavioral episodes and recognize that psychological stress usually results in promoting rigidity in behavior. (LA-39-40) (C173-174) (Kimble-G 479-480) (S-S 102-103)

6. Describe how a human being behaves as an integrated unit in such a way that the different psychological processes interact and are coordinated in the adjustment process. Be able to give some behavioral illustrations of this. (C 82) (LA-44-45) (S-S 151-153)

7. Illustrate how human behavior can only be understood in terms of the interaction effects of different motives and stresses. (C-73-75, 78-79) (S-S 37-38, 55, 77, 80, 82, 90, 93)

8. Give reasons why deviation from the "norm" is not an adequate criterion for "good" adjustment. (C 14) (LA 15) (G-K 88-104)

9. Be able to state why "normal" psychological adjustment must be considered only in relative terms. (LA-15-17 (T 591) (S-S 147-148)

10. Be able to illustrate that "adequate adjustment" at one stage of life would not be adequate adjustment for another phase or time in the individual's life. (C 66-67, 600)

11. Illustrate how the behavior that would be considered "normal" behavior for one individual may reflect poor adjustment when displayed by another individual. (LA-16-17) (S-S 147-148).

12. State reasons why an individual's adjustment level should not be viewed as a static state. (C-15, 600) (LA 26) (S-S 3-4).

13. Illustrate how individuals from different cultures, different social groups, and different social classes will have learned different ways of adjusting, thus, their behavior must be viewed in terms of their reference groups and their unique past experiences. (C 130-131, 261) (S-S 79-83, 426-431) (G-K 115-124).

14. Produce a list of distinguishing behaviors that can generally be attributed to the "well adjusted" person, but that are not usually characteristic of the less well adjusted. Explain why these characteristics should not be used as "rigid measuring sticks" in evaluating an individual's adjustment. (T 595-599) (LA 14-15) (K-G 576-577) (S-S 147-148).

15. Give reasons why the "labeling" of an individual as either maladjusted or "well adjusted" is not in accordance with the adjustment concept. (S-S 147-148, 305-306, 247)

16. Give reasons why being well adjusted does not imply conformity, nor does it imply nonconformity. Show evidence of understanding that, in society, some degree of conformity is necessary but that rigid adherence to the indicates of the group should not be equated with "good adjustment" (S-S 87-88) (LA 10-11)

17. Be able to state why the absence of signs of psychological stress is an inadequate way of viewing good adjustment. (LA 18-19) (S-S 157-158)

18. Give evidence that they recognize and refute the "moralistic" view of maladjustment and are able to provide a better interpretation of maladjusted behavior. (S-S 7-8)

19. Give explanations of why lecturing, punishment, and the giving of advice have proved to be notably ineffective as methods for dealing with adjustment problems. (C 565-566) (S-S 7-8) (K-G 497-499)

MOTIVATION AND EMOTION

20. Be able to diagram the adjustment process and describe the function of the following in this process: (S-S 28-29, 55-56)
    a. drive b. mechanism c. emotional tension

21. Be able to describe and illustrate the role emotional arousal plays in the process of acquiring motives. (S-S 79-91)

22. A motive can be defined as a complex, socially learned pattern involving situation, drive, mechanism and adjustment. Be able to discuss each aspect of this concept in terms of its importance to the understanding of human motivated behavior. (S-S 84-86)

23. Give a definition for the terms avoidant drives and adient drives. Be able to describe and illustrate how each may become attached to new stimuli. (S-S 39-43, 78-79)

24. Explain how it is possible for drives to be aroused, not only by internal needs, but also, by external stimuli. Give reasons why this is an important principle in the development of social motivation. Be able to describe an additional principle that is needed in order to completely explain the development of acquired motives. (S-S 59064, 75-84).

25. Be able to explain why human beings, from different cultures, differ a great deal in their socially acquired motives. Give some illustrations of this. (S-S 81-83)

26. Using a comparison of the middle class child and the lower class child in our society illustrate the influence that cultural impact has on acquired motivation. (S-S 82-83, 420-431)

27. Describe two dangers involved in the common practice of calling a motive by name. (S-S 85)

28. Be able to explain why the concept of attitude is a useful concept in emphasizing the integrated nature of motivation. (S-S 93-94).

29. Be able to give reasons why it is impossible to develop a dependable list of human motives. (S-S 85-86).

30. Be able to explain the importance that the processes of externalization of drives and the internalizing of cultural requirements have on the socialization of a child. Be able to illustrate the role that emotion plays in this socialization process. (S-S 83-84) (C 126-127)

31. Be able to describe the two steps involved in the internalization of drives and explain why the first step is often learned while the last step in the process is not. Be able to illustrate and describe the possible end-results of this learning process. (S-S 83-84)

32. Describe the learning process by which criticism and blame become capable of arousing fear tensions. Use an illustration to demonstrate the possible results of this learning process. (S-S 87-88).

33. Describe the learning process that could result in a child withdrawing from contacts with people. (S-S 87).

34. Give reasons why social training is achieved more effectively by the positive method of attaching approval to desired responses rather than by punishing undesirable behavior. (S-S 88)

35. Give reasons why you must conclude that there is a connection between childhood emotional training and adult patterns of motivation. (S-S 86-91)

36. Give illustrations of how a strong drive can influence what a person will notice or perceive inhis environment. (S-S 37-38) (C 74-75).

37. Be able to describe some culturally induced patterns of emotional expression. (C 131-133) (K-G 382-383)

38. Be able to describe how fears are acquired and extinguished, thus, demonstrating a good understanding of the role learning plays in the acquisition of fears. (S-S 67-72, 214-217)

39. Recognize the importance of preventing the acquisition of unwarranted fears, and being cognizant of the complicated psychological nature of some fears, thus, demonstrating an awareness of the dangers involved in having a psychologically untrained person attempt to eliminate fears. (T 294-297)

40. Be able to give an explanation for the fact that an individual may be quite unaware of the actual motives that guide much of his behavior. (S-S 75-76, 138-140, 228-241)

41. Give an illustration of how the behavior of the poorly adjusted individual often reveals that there is a conflict between conscious and unconscious motivational factors. (C 92-93) (S-S 175-177)

42. Explain why unconscious elements in our motivation may make it difficult to change behavioral patterns. (LA 11) (S-S 138-140) (C 75-76).

CONFLICT AND FRUSTRATION

43. Be able to state the "frustration-aggression hypothesis" and describe the behavioral effects of frustration (K-G 472-474).

44. Give an illustration of displaced aggression and indicate reasons why direct overt aggression may be inhibited or freely expressed in difficult situations. (K-G 474-475, 492-496)

45. Be able to evaluate classroom procedures in terms of the production of frustration. (T 301-302)

46. Describe the relationship between conflict and frustration. (S-S 111-112)

47. Demonstrate an understanding of the dynamic role that conflict and frustration play in the instigation of maladjustive behavior. (LA 11-12) (C 136-140).

48. Define the term conflict and describe the different types of conflict. Explain how each type of conflict may be resolved. (K-G 484-488, 497-499).

49. Describe how individuals in an avoidance-avoidance conflict often attempt to leave the conflict situation, either physically or psychologically. Be able to describe psychological means of escaping from this type of conflict. (S-S 109-) (C 86-67).

50. Be able to identify some of the adjustive values of day-dreaming and some of the detrimental aspects of daydreaming in terms of the total adjustment of the individual. (C 86-88) (S-S 200-215)

51. Be able to analyze an approach-avoidance conflict in such a way as to reveal good explanations for the behavioral manifestations that can be observed when an individual is experiencing this type of conflict. (K-G 489-499)

52. Describe the concept of stress and identify some common psychological stressors. (C 76-78)

ANXIETY

53. State the relationship between conflict and anxiety. Be able to give an illustration of this. (K-G 507-508) (C 83-84, 136-140) (S-S 119-123).

54. Illustrate how anxiety may act as a drive. (S-S 122-123) (K-G 508-510)

55. Explain in general terms how the conditioning process can be used to describe how anxiety is acquired. Give an illustration of this by using a child's own feelings of hostility as the conditioned stimuli. (K-G 507-508) (L 264-266 & 271-278).

56. Describe and illustrate the relationship between anxiety and defense mechanisms. (K-G 512-513) (S-S 164-165)

57. Be able to describe childhood experiences that may predispose a child to make anxious responses to his conflicts, instead of constructive responses. (S-S 281-282, 440-442).

58. Identify some of the behavioral manifestations of unreduced anxiety. (S-S 275-281) (L 280-282)

59. Be able to contrast the effects of mild and high anxiety on various psychological processes, thereby, showing some understanding of the adjustive values of mild anxiety. (K-G 508-511)

Behavioral Patterns of Adjustment

60. Give reasons why the anxiety produced by frustration and conflict energizes the individual to adjust in some way. (C 84-86) (G-K 181-193)

61. Be able to describe how each individual acquires unique characteristic ways of adjusting to stresses. (G-K 326-348)

62. Describe some common modes of adjustment that are frequently observed by teachers. (C 328-332) (T 599-600, 607-611) (S-S 182-213, (G-K 398-408).

63. Be able to describe the process by which defense mechanisms are learned. (S-S 169-170) (LA 20-21) (G-K 326-348).

64. Give reasons why defense mechanisms can be viewed both as adjustive and maladjustive processes. (S-S 184-186) (G-K 326-348) (C 100).

65. Describe and illustrate the role that unconscious forces play in the maintenance of defense mechanisms. (S-S 169-170, 175-177) (K-G 512-513)

66. Describe how defensive behavior can be identified. Give illustrations of this. (S-S 160-169).

67. Identify some of the unfavorable results of defensive behavior. (C 86-87).

68. Describe the relationship between the use of defense mechanisms and behavior pathology (C 101-104) (LA 20-25)

69. List common causes for withdrawal behavior. (S-S 190-192).

70. Be able to illustrate how withdrawal could be viewed as an integrative response as well as a non-integrative one. (S-S 191 (C 85-86)

71. Be able to identify some of the unfortunate consequences of withdrawal on the future adjustment of a child. (S-S 190) (C 276-278)

72. Explain why teachers are more apt to notice adjustment by aggressive behavior before they take note of adjustment by withdrawal. (S-S 187-190)

73. Give reasons why equal degrees of withdrawal does not imply equal seriousness in terms of the adjustment levels of different students. (S-S 191)

74. Describe how individuals who tend to adjust by overt maladjustive behavior which often includes aggressive "acting out" differ from individuals who tend to use other modes of adjustment. (C 100) (S-S 182-184) (T 502-504) (LA 25-26).

75. Give reasons why mechanisms like "attention getting" and compensation are often associated with delinquent behavior. (S-S 182)

76. Give reasons why delinquent behavior should be viewed as learned modes of adjustment. (S-S 182)

77. Be able to describe behavioral manifestations of adjustment by ailments and give some valid psychological explanations for these disorders. (S-S 248-266)

78. Be able to describe some behavioral patterns that can be observed in the classroom that would reflect adjustment by ailments. (K-G 389-400) (S-S 248-253, 289-290).

79. Describe the relationship between stress and behavior pathology. (C 100-104).

80. In general terms, describe the disintegration of behavior and of adjustive ability under conditions of excessive stress. (C 101-104).

81. Be able to contrast abnormal behavior and "normal behavior" in terms of the adjustment concept. Give reasons why it is correct to view both as the end results of the learning process. (LA 14-15) (S-S 136-138).

Personality

82. Explain why personality must be viewed as a set of inferences. (LA 28-33).

83. Describe and clarify the significance of the following attributes of personality: (1) consistency, (2) development of structure (3) potentiality for change, and (4) integration. (LA 37-45)

84. Be able to briefly describe and evaluate the following ways of viewing personality: (1) traits (2) types (3) learning theory, and (4) phenomenological point of view. (Identify the focus of each approach in terms of the S-O-R paradigm. (LA 53-63)

85. Be able to explain the meaning of the statement, "Personality development can only be considered in terms of multiple causation." (K-G 437-451)

86. Give reasons why the two extreme positions, reflected in the viewpoints that personality is biologically or culturally determined, are equally untenable. (G-K 252-263).

IMPORTANT

Adjustment Concept

1. State the advantages that are evident in developing an understanding of mental health that is not dominated by the negative idea of the absence of symptoms of pathology. (LA 18-19) (S-S 8, 157-158).

2. Give illustrations of how cognitive inefficiency may be a criterion of maladjustment. (LA 14-15)

3. Describe a situation in which there is an absence of awareness of psychological stress even though such stress exists. (S-S 262-265) (LA 17)

4. Give illustrations of how within the same society, what is normal in one era may be reflecting poor adjustment in another era. (LA 16)

5. Be able to supply a statement, frequently made by teachers, which reflects the "Moralistic" point of view concerning maladjustment. (S-S 9)

6. Be able to state mental hygiene principles and illustrate the classroom applications of these. (S-S 552-566, 584-590) (K-G 576-577)

Motivation and Emotion

7. Be able to state reasons why rigid control of emotional expression is not one of the goals advocated by mental hygienists. (S-S 74-75, 83-84, 117, 236-238) (C 95) (K-G 474-475, 479)

8. Describe and evaluate the following theories of motivation: (1) instinct theories, (2) energy theories, (3) need theories, and (4) motivation as stimulation. (S-S 25-28)

9. A striving organism is often said to be in a state of tension. Be able to give two psychological meanings for the term tension. (S-S 36-37)

10. Give reasons why many psychologists think it is unfortunate that society too often encourages the inhibition of potentially disruptive emotions rather than the constructive channeling of their expression. Give illustrations of "constructive channeling of emotional expression." (S-S 74-75, 83-84, 117, 236-238) (C 75, 84, 92 and 95)

11. Be able to identify the different aspects of emotional expression, understand the importance of individual differences in expression, and realize that these differences must be contributed to the interaction of heredity and environment. (T 276-278, 285-288).

12. Distinguish between the effects of strong and mild emotional arousal on various psychological processes. (S-S 56-57) (K-G 508-511)

13. Be able to identify the physiological concomitants accompanying strong emotions and list the possible consequences of long-termed activation of these. (L 280-282) (S-S 51-54)

14. In general, be able to identify effective behavior that adults may display in response to children's emotional behavior. (T 288-312)

15. Demonstrate an understanding of the concept of emotional maturity and recognize that emotional competence is not a static state that can be achieved once and for all. (K-G 576-577) (C 66-72)

16. Be able to illustrate the motivating properties of fear. (S-S 87-88) (K-G 197-200)

17. Define and illustrate the concept of stimulus generalization and show its importance in understanding fears. (S-S 72-72) (L 102-103) (T 294) (C 128)

18. In general terms identify, without demonstrating a detailed understanding, the important role played by the central nervous system, the autonomic nervous system, and hormonal changes in determining motivational and emotional behavior. (K-G 386-399) (S-S 51-54)

19. Give illustrations of behavioral episodes in which feelings, that have been inhibited, or motivational aspects that are unconscious are expressed through psychologically disguised ways. (S-S 140-147)

20. Define the concepts of consciousness and unconsciousness and give reasons why these concepts should be viewed as representing extremes on a continuum of awareness. (K-G 200-202) (S-S 75-76, 138-140)

21. Analyze and give reasons why it is probably true that to the extent that unconscious processes are involved in determining all but the most routine type of behavior, the individual's flexibility of response is reduced. Give illustrations of this and describe how this probably influences the individual's ability to adjust. (S-S 75-76) (K-G 200-202)

Conflict and Frustration

22. Indicate a realization that frustration is inevitable and be cognizant of individual differences in ability to tolerate frustration. (K-G 466-472).

23. Be able to describe the relationship between frustration tolerance and the intensity of the stress. Also be able to illustrate individual differences in frustration tolerance as a function of the types of stressors experienced. (K-G 466-472) (C 100-104)

24. Be able to illustrate how the behavior elicited by frustration can be an indication of the adjustment level of the frustrated person. (C 78-79) (Coleman 100-104) (L 309-310)

25. Be able to describe some variables that tend to control the strength of aggressive responses. (K-G 472-474).

26. Describe the influence that catharsis has on the instigation to aggression. (K-G 475-476) (C 542)

27. What are some of the behavioral responses to prolonged and inescapable frustrations? (K-G 476-480)

28. Describe behavioral situations in which frustration produced regressive behavior. (K-G 477-479) (S-S 102-103) (C 96-98)

29. Be able to define the term fixation and describe the relationship between frustration and fixation. (K-G 479-480)

30. Give an illustration of a conflict between alternative actions for meeting the same need and an illustration of a conflict steming from contradictory motives. (LA 6-8) (C 78)

31. Be able to diagram and explain Lewin's analysis of conflicts in terms of the valence of different alternatives in a conflict situation. (S-S 104-111) (K-G 485-488).

32. Be able to describe the behavioral manifestations steming from inability to resolve conflicts. (L 308-309) (LA 9-12) (S-S 119-123)

33. Define the term ambivalence, identify the type of conflict that is involved, and be able to give common illustrations of ambivalence. (KG 496).

34. State the principle that is illustrated in studies showing that individuals, sometimes choose a goal just because it is a little harder to attain. (S-S 100-101).

35. Be able to give good psychological explanations of why problems in the area of sex adjustment often play a prominent role in maladjustment. (S-S 54, 90, 238-240) (C 120-121, 139-140).

36. Be able to explain why it is true that a person in a severe conflict situation often behaves in what could be termed an "irrational" way that seems contrary to his own best interest. (C 178-180) (S-S 75-76, 121-122).

37. Be able to state factors that influence the severity of stress experienced by an individual. (C 78-84, 100-104) (K-G 469-470).

38. Give explanations of why a situation may be acutely stressful for one person and not so stressful for another (C 78-79) (K-G 466-472).

39. Demonstrate an understanding, by giving illustrations, of the fact that stresses usually do not occur singly or operate independently of one another. (C 78-79) (K-G 466-472).

Anxiety

40. Be able to distinguish between anxiety and fear, demonstrating in addition, an understanding of why it is so difficult for an individual to cope with anxiety. (S-S 49-50) (K-G 506-507).

41. Be able to define the possible relationship between security and anxiety. Be able to identify environmental conditions that probably foster insecurity and be able to describe manifestations of this displayed in children's behavior. (T 308-309).

42. Be able to list some of the somatic (physiological) manifestations that accompany anxiety. Be able to state conclusions concerning the relationship of conflicts and anxiety to the development of psychosomatic conditions. (L 280-282).

43. State some valid reasons why there are great individual differences in the amount of anxiety experienced by different persons. (L 274-278).

44. Describe the effects of stimulus generalization on behavior elicited by anxiety. (L 279-280).

45. Describe occasions for anxiety that occur frequently in our everyday existence. (L 272-274).

Behavioral Patterns of Adjustment

46. Provide a good definition for the term defense mechanism, identify different types of defense mechanisms, and describe the adjustive functions of each. (K-G 512-522) (S-S 169-182).

47. State conclusions that can be drawn concerning the use of defense mechanisms by the so-called "well adjusted" individual. (LA 20-23) (G-K 329-330).

48. Identify some guide-lines a teacher can use in coping with a child who excessively uses defense mechanisms. (G-K 329-348) (S-S 184-186).

49. Define the term "defensive" identify factors that elicit defensive behavior and illustrate behavioral manifestations of defense behavior. (S-S 160-169).

50. Give a definition for the term self-concept and evaluate the usefulness of this construct in explaining human behavior. (S-S 94-95).

51. Be able to describe the probable characteristics of the self-concept of an overly defensive person. (S-S 164-169).

52. Be able to describe the general behavior patterns of children who have learned to adjust in the following ways: (1) by defense (2) by withdrawal (3) by aggressive behavior (4) by illness (G-K 326-329) (S-S 158-186, 187-213, 246-266 and 287-291).

53. Explain the meaning of the statement, "It is important to recognize that psychopathological symptoms differ from normal behavior in degree but not in kind." Give illustrations of this and state some implications that stem from this idea. (K-G 551-552).

54. Recognize that under conditions of overwhelming stress, the "so-called well adjusted" individual will display abnormal behavior. (C 166-170) (K-G 470-471).

55. State reasons why behavior pathology can not be classified clearly in terms of either symptoms or causes. (K-G 525-528, 552). (C 17).

56. Give explanations of why individuals suffering from behavior pathology usually lack insight into their adjustment problems. (C 75-76, 173-174) (S-S 138-140, 236-238).

57. State reasons why it is incorrect to view the defensive person as deliberately trying to be unreasonable and irritating to others. (S-S 169-170) (G-K 330).

58. Give reasons why it is true that as an individual starts to display more and more defensive behavior he becomes increasingly incapable of effective behavior. (S-S 160-165).

Personality

59. Be able to enumerate the points most often included in a definition of personality. (K-G 89).

60. Give reasons why it is better to think of personality characteristics as being distributed along a continuum than to view them as classified into types. (S-S 315-317) (K-G 451-452).

61. Give reasons why psychologists are not likely to agree on a single set of personality traits. (K-G 452-453). (S-S 317-318).

62. In general, be able to state factors that contribute to differences in personality. (K-G 437-451) (C 60-72).

63. Be able to draw some conclusions concerning the appropriateness of utilizing different types of measures of personality in the school setting. (S-S 329-334, 339-343).

64. Describe some of the problems involved in developing tests to measure personality. (K-G 89, 102-105).

Psychology 351

Human Learning

*Deese, James. The Psychology of Learning. (2nd ed.) New York: McGraw-Hill, 1959.

A complete introductory treatment of the major topics of learning. Each student should attempt to reach an understanding of the concepts of learning at the level presented by Deese's text. You may find it necessary to refer to some of the other suggested readings as background for the material presented in this text.

Hill, Winfred F. Learning: A Survey of Psychological Interpretations. San Francisco: Chandler Publishing Co., 1963. (paperback)

An introductory survey of contemporary learning theories designed to provide a fairly elementary, but solid account of this topic for students of education. The first chapter provides a good explanation of the place of the psychology of learning in education.

*Holland, James C. & Skinner. B. F. The Analysis of Behavior: A Program for Self-instruction. New York: McGraw-Hill, 1961. (paperback)

A self-instructional text dealing with the basic elements of learning from a reinforcement theory position. It is recommended that any student who encounters difficulty with the terminology and basic methods of learning use this text.

Keller, Fred S. & Schoenfeld, William N. Principles of Psychology. New York: Appleton-Century-Crofts, Inc., 1950.

An introductory level presentation of the basic elements of learning from a reinforcement position. The material presented in this text will serve as a good background for the readings in Deese and Lundin.

Killer, Fred S. Learning: Reinforcement Theory. Random House Papers in Psychology. New York: Random House, 1954. (paperback)

A short paperback dealing with the essentials of learning from a reinforcement point of view. Contains much of the same material contained in Keller and Schoenfeld, but in a shorter presentation.

*Kimble, Gregory and Garmezy, Principles of General Psychology. (2nd ed.) New York: Ronald Press, 1956.

An introductory psychology text with an excellent presentation of the essentials of learning and the methods of science. Any student encountering any difficulty with any of the other readings should refer to this book for the necessary background. You will find this book a good first reference.

*Starred readings are of primary importance.

Lundin, Robert W. Personality, An Experimental Approach. New York: Macmillan Co., 1961.

Although the title suggests a book in personality, most of the book is devoted to learning. Provides excellent presentations of most of the material introduced in Holland and Skinner.

Rosenblith, Judy F., & Allinsmith, Wesley. The Causes of Behavior. Boston: Allyn & Bacon, 1962.

A book of readings.

A. Learning Definitions and Methods of Study

Readings:

*Kimble & Garmezy, Pp. 133-134 (Ch. 2 for review of the methods of psychology).
Keller & Schoenfeld. Ch. 1.
Keller, Pp. 1-7.
*Holland & Skinner, Pp. 1-72.
*Deese, Ch. 1.
Hill, Ch. 1.

Study Questions:

1. Be able to explain the importance of each of the underlined groups of words in the following definition of learning: "Learning is a relatively permanent change in a behavior tendency which occurs as a result of reinforced practice."

2. Distinguish between learning and performance and between learning and maturation.

3. Describe the extent to which maturation is a factor in the acquisition of academic responses.

4. Describe the function of theories of learning in the scientific investigation of the learning process.

5. What part do hypothetical constructs play in the formation of learning theories?

6. Explain the statement, "Learning is a hypothetical construct."

7. Be able to identify the learning objectives of a unit of study in your intended teacher area and grade level and define the performance factors you would accept as evidence that the desired learning had taken place.

8. Be able to define the following terms as they are used in the explanation of the learning process.

   a. operational definition
   b. independent variable
   c. unconditioned stimulus
   d. conditioned stimulus
   e. response
   f. cumulative response curve
   g. stimulus threshold or linen
   h. response latency
   i. dependent variable
   j. empirical

B. Reinforcement and Conditioning

Readings:

*Kimble & Garmezy, Pp. 134-142, 146-178, 193, 246-248.
Keller & Schoenfeld, Chapters 2, 3, 4, and 8.
*Holland & Skinner, Pp. 72-137.
*Deese, Chapters 2, 3, and Pp. 135-151.
Lundin, Chapters 3, 4, and 6.
Hill, Pp. 190-195.

Study Questions:

1. Be able to distinguish between classical and instrumental conditioning on the basis of the following factors.

   a. elicited and emitted behavior
   b. operant and respondent behavior
   c. the basic paradigm which describes each type of conditioning
   d. the control exercised by the experimenter in each case
   e. the relationship of reinforcing stimuli to the response
   f. what is learned-stimulus substitution or some modification of response characteristics

2. Be able to indicate four measures of response strength (measures of conditioning) and give an example of each which is meaningful in an educational context.

3. Describe the method of "successive approximations" in conditioning.

4. Distinguish between avoidance training and escape training. Be able to give examples of each in human behavior.

5. Indicate the manner in which each of the following variables affect learning and/or performance.

   a. amount of practice
   b. amount of reinforcement
   c. delay of reinforcement (latency)
   d. quality of reinforcement
   e. motivation
   f. distribution of practice
   g. amount of effort required in the learning activity

6. Give an operational definition of positive reinforcement, of negative reinforcement, and of a neutral stimulus.

   a. give examples of possible positive and negative reinforcers that are likely to be under the teacher's control.

7. Define experimental extinction and indicate the condition under which it is produced.

8. Describe the relationship between each of the following variables and resistance to extinction.

   a. number of reinforcements
   b. effort of response
   c. distribution of responses in time

9. Describe the general effect of partial or intermittent reinforcement upon resistance to extinction. Indicate the manner in which partial reinforcement may be effectively used in a classroom situation.

10. Describe each of the following schedules of reinforcement. Indicate the manner in which reinforcement is administered, the general characteristics of the behavior produced by each schedule, and the characteristic of behavior during extinction.

    a. continuous
    b. fixed interval
    c. variable interval
    d. fixed ratio
    e. variable ratio

11. Describe the differences in effect on behavior produced by punishment and by extinction. Be able to describe the effects of punishment in some detail, including the evidence provided by the following studies reported in Lundin, Personality, An Experimental Approach, Thorndike (1932), Stephens (1934), Skinner (1938), and Azrin (1956).

12. Indicate the conditions under which punishment might be appropriate in an educational situation. Describe the possible effective use of punishment and indicate the possible undesirable effects.

13. Distinguish between primary and secondary reinforcement.

14. Be able to define the following terms.

    a. spontaneous recovery
    b. base operant level
    c. latent learning
    d. Law of Effect
    e. backward conditioning

15. How would you determine the effectiveness of any proposed reinforcer in a teaching situation?

16. What is the function of reinforcement in the learning process according to each of the following theoretical positions?

a. Hull b. Guthrie c. Skinner

C. Generalization and Discrimination

Readings:

*Kimble & Garmezy, Pp. 143-146.
Keller & Schoenfeld, Chapters 5, 6, & 7.
*Holland & Skinner, Pp. 137-181.
*Deese, Ch. 4.
Lundin, Ch. 5.

Study Questions:

1. Distinguish between stimulus generalization and stimulus discrimination.

2. Distinguish between primary and secondary stimulus generalization.

3. How does response differentiation differ from stimulus discrimination?

4. Give examples of generalization and discrimination in children's learning.

5. Be able to describe how the concepts stimulus generalization and discrimination are useful in explaining children's concept formation.

6. Indicate the means you would employ to teach a response which would have maximum generalization. Indicate the means you would employ to teach a response which should be discriminated as appropriate only under specific conditions.

D. Motivation and Learning

Readings:

*Kimble & Garmezy, Ch. 4.
Keller & Schoenfeld, Ch. 9.
*Holland & Skinner, Pp. 181-208.
*Deese, Chapters 5 and 6.
Lundin, Ch. 7.

Study Questions:

1. What is meant when it is said that motivation is a construct?

2. Distinguish between primary drives and secondary or acquired drives.

3. How are secondary drives acquired? Be familiar with both the classical and instrumental conditioning explanations.

4. What is the predominant view of the origin of human motives held by contemporary psychologists?

5. Some experimental evidence suggests that motivation is not important to learning but only to performance. What evidence from latent learning experiments and from experiments on the effects of different levels of motivation supports this generalization?

6. What are two generalizations which can be drawn from studies of incidental learning?

7. Using a reinforcement framework, describe the general means a teacher would employ to develop and to sustain motivation for any particular area of learning.

E. Conditions of Practice

Readings:

*Kimble & Garmezy, Pp. 155-156.
*Deese, Ch. 8.

Study Questions:

1. What are some limitations of the use of "average learning curves" in the interpretation of the effects of different conditions of practice upon the learning of individual subjects?

2. Distinguish between a plateau and an asymptote. What are reasons for plateaus and asymptotes?

3. Summarize the generalization which can be drawn from studies of massed and distributed practice.

4. How can the concepts of distributed practice be utilized in planning teaching activities?

5. What is reminiscence? To what extent does reiminiscence make up for the differences in effects of massed and distributed practice? What is the influence of work inhibition on reminiscence?

6. What effect does knowledge of results of performance have upon learning?

7. Describe the relationship between meaningfulness of material to be learned and learning efficiency?

8. What is the relationship between difficulty and length, or amount of material to be learned and learning efficiency?

9. Describe the conditions of practice that should be kept in mind in planning your teaching activities, relate to your specific area and grade levels.

F. Transfer

Readings:

*Kimble & Garmezy, Pp. 182-184 & 227-233.
*Deese, Ch. 9.
Keller & Schoenfeld Review, Pp. 169-174.
Rosenblith and Allinsmith, Pp. 451-463.

Study Questions:

1. Distinguish between the following conditions of transfer.

   a. Positive transfer and negative transfer
   b. proactive inhibition
   c. retroactive inhibition
   d. proactive facilitation
   e. retroactive facilitation

2. Be able to describe the experimental design for determining each of the following transfer conditions.

   a. retroactive facilitation and inhibition
   b. proactive facilitation and inhibition

3. What are the conditions that determine whether transfer effect will be positive or negative?

4. What are the conditions which determine whether the transfer effect will be large or small?

5. Of what importance is transfer to educational practices?

6. Describe the characteristics of the formal discipline theory of transfer? What effect did this theory have upon educational practices of that day?

7. What was the effect of the studies of Thorndike (1901, 1922, 1923) and others upon the formal discipline theory of transfer?

8. What is the importance of identical elements in two stimulus situations to transfer?

9. What is meant by a learning set? What effect does learning set have upon the individual's responsiveness to different kinds of stimuli?

10. What is meant by bilateral transfer?

11. Under what conditions might one most effectively train for transfer in an educational setting? Identify the factors which should be taken into consideration by the teacher in using <u>any</u> instructional approach if transfer is to be maximized.

12. What is the relationship between intelligence and ability to transfer?

13. What is the relationship between the concept of transfer and stimulus generalization?

G. Retention and Forgetting

Readings:

*Kimble & Garmezy, Ch. 9.
Keller & Schoenfeld, Review, Pp. 78.
*Deese, Ch. 10.

Study Questions:

1. The rate of forgetting depends to a large degree upon the particular measure used to measure it. Describe each of the five approaches commonly used to measure forgetting and retention. Indicate the differences in type of information revealed by each. Identify each measurement technique with its counterpart (where possible) in traditional educational tests.

2. What is the relationship between meaningfulness of material and rate of forgetting?

3. What is the relationship between degree of original learning and rate of forgetting?

4. What are the effects of different amounts of overlearning upon retention?

5. It is frequently said that individuals who learn slowly remember longest. What is the evidence relating to the relationship between speed of learning and retention?

6. What is the effect of different kinds of activity intervening between the time of learning and the time of measurement of retention upon amount of retention? What kinds of intervening activity produce the least retention? The most retention?

7. What is the relationship between retroactive inhibition and forgetting?

8. Forgetting is often believed to occur as a result of disuse. What are the grounds for dismissing the notion of disuse as an explanation of forgetting?

9. Provide a description of the conditions under which forgetting is most likely to occur and the conditions under which forgetting is least likely to occur.

10. During which interval of time following learning does the greatest amount of forgetting occur?

11. If you were to review a lesson such that it would have the least likelihood of being forgotten rapidly, and the greatest likelihood of being transferred, what practice conditions would you employ? Include consideration of spacing of practice trials, length of rest periods, amount of overlearning, and meaningfulness of the material.

12. Distinguish between forgetting and extinction.

INDEPENDENT STUDY

CHILD DEVELOPMENT STUDY GUIDE

Byron W. Lindholm

The proficiency tests given during the 1964-65 term will be based on the questions in this study guide. The locations of the answers are indicated by the page numbers in parentheses behind each question. The text is Child Psychology by Thompson.

Chapter 1

THEORIES

1. What is meant by child psychology? (T 3-4)

2. What ages are included in the definitions of the following terms? (T 3)

   a. Germinal
   b. Embryo
   c. Fetus
   d. Neonate
   e. Infant
   f. Preschool
   g. Primary school
   h. Intermediate school
   i. Junior high school
   j. Adolescence

3. Why do psychologists use this classification system? (T 3-4)

4. What did the following men contribute to the history of child psychology? (T 4-7)

   a. Plato
   b. Locke
   c. Rousseau
   d. Dewey
   e. Darwin
   f. Mendel
   g. Tiedemann
   h. Hall
   i. Binet
   j. Watson

5. What were the implications of the following early theories of development? (T 7-9)

   a. Children should be viewed as miniature adults.
   b. Children are born with tendencies toward evil.
   c. Children recapitulate the history of our race.

6. Why are theories so important? (T 9-10)

7. Why are some theories better than others? (T 10)

8. How are theories constructed? (T 10-13)

9. What is meant by operational definition? (T 12)

10. How did Freud derive his theory of development? (T 14)

11. What are the main stages of development according to Freud? (T 14-16)

12. What influence do these developmental stages have on later personality? (T 14-16)

13. What is meant by the Oedipus complex? (T 15-16)

14. What is meant by critical periods of development? (T 18-19)

15. What are the basic principles of cognitive-field theory regarding development? (T 19-20)

16. What are the advantages of behavior theory as opposed to cognitive field and psychoanalytic theories? (T 13-14, 16-18, 20-22)

Chapter 2

RESEARCH METHODS

1. How have research methods used by child psychologists changed in recent years? (T 26)

2. How do psychologists increase the reliability of their conceptual inferences? (T 27)

3. What is meant by correlational analysis and experimental investigation?

4. What are the advantages and disadvantages of these methods? (T 27-31)

5. How would you describe the following special methods of psychological research? (T 31-47)

6.
Normative	Questionnaires
Anecdotal	Rating Scales
Biographical	Standardized tests
Case history	Psychoanalytic interview
Observation	Projective tests

7. What are the advantages and disadvantages of these methods? (T 31-47)

8. What is meant by cross-sectional and longitudinal investigation? (T 32)

9. How do psychologists use the following kinds of special apparatus? (T 36-45)

a. Motion pictures	e. One-way screen
b. Sound recordings	f. Conditioning apparatus
c. Isolation cabinet	g. General test apparatus
d. Stabilimeter	h. Token-reward machine

10. How are psychological tests constructed? (T 42)

11. What difficulties are encountered in obtaining children for use in psychological research? (T 47-50)

12. How can these difficulties be overcome? (T 47-50)

Chapter 3

THE NEONATE

1. Why study the fetus and infant? (T 59-60)

2. What methods do psychologists use to study prenatal development? (T 61-68)

3. What are the advantages and disadvantages of these methods? (T 61-68)

4. What is meant by cephalo-caudal, proximo-distal and mass-specific trends in development? (T 61-62)

5. What generalizations can you make regarding motor development in the human fetus? (T 62-64)

6. What receptor systems are capable of responding to stimuli prior to birth? (T 64-66)

7. What opportunity does the prematurely born infant have for normal development? (T 66)

8. What kinds of stimuli can arouse behavior in utero? (T 64-68)

9. How is prenatal activity related to later development? (T 67)

10. What influence does birth trauma have on later development? (T 68-69)

11. What changes occur in physical dimensions and structure during early life? (T 69-73)

12. What generalizations can you make regarding motor development in the human neonate? (T 73-77)

13. What variables influence crying in the neonate? (T 79)

14. What is meant by sleep according to psychologists? (T 79-80)

15. What variables influence activity in the neonate? (T 80)

16. How do sleep habits change with age? (T 80)

17. What variables influence sucking in the neonate? (T 80-81)

18. What influence does self-demand have on the feeding schedule? (T 81)

19. How does thumbsucking change with age? (T 81-82)

20. How do psychologists explain thumbsucking? (T 81-82)

21. What influence does thumbsucking have on later development? (T 81-82)

22. What influence does maturation of the central nervous system have on development of the grasp, plantar and startle reflexes? (T 82-85)

23. What are the Babinski and Moro reflexes? (T 83-85)

24. How do psychologists study visual development during infancy? (T 85-88)

25. How early in life do the following visual responses appear? (T 85-88)

    a. light - dark
    b. fixation
    c. coordination
    d. pursuit
    e. pattern
    f. color

26. How early in life do infants respond to differences in pitch, loudness and duration of auditory stimuli? (T 88-89)

27. How early in life do infants respond to differences in gustatory and olfactory stimuli? (T 89-91)

28. How early in life do infants respond to differences in temperature and pain? (T 91-94)

29. What receptor systems are most highly developed at birth? (T 94)

30. Why are these receptor systems more highly developed than the others? (T 94)

Chapter 4

MATURATION

1. What is meant by maturation? (T 99-102)

2. What influence does maturation have on the development of higher as opposed to lower animals? (T 102-104)

3. What influences does a human environment have on the development of chimpanzees? (T 103-104)

4. What influence does maturation have on the following examples of sub-human development? (T 104-109)

    a. Swimming in the tadpole
    b. Vision in the chimpanzee
    c. Feeding in the chicken

5. What influence does environmental deprivation beyond some critical point have on development? (T 109-111)

6. What influence does early as opposed to later experiences have on development? (T 111-113)

7. How do psychologists study maturation in human beings? (T 113-114)

8. What are the basic principles of McGaw's theory of infant maturation? (T 114-115)

9. What generalizations regarding education can be made from this theory? (T 115-116)

10. What influence does maturation have on emotional development? (T 119-120)

11. What influence does restriction or special training have on motor development (T 120-123)

12. What is meant by autogenous and sociogenous? (T 120-121)

13. What is meant by ontogenetic and phylogenetic? (T 122-123)

14. What difficulties are encountered in the study of maturation in older children? (T 123-124)

15. What influence do critical periods have on preschool development? (T 124-125)

16. What is meant by practice and training? (T 125)

17. What influence do practice and training have on the following preschool activities? (T 125-130)

    a. Throwing a ball at a target
    b. Buttoning, climbing, drawing, etc.
    c. Singing tones and phrases.

18. What criteria should be kept in mind when evaluating the influence of practice and training? (T 129-130)

19. What influence does maturation have on the development of school age children? (T 130-132)

20. What influence does maturation have on individual differences? (T 130-131)

21. Why are tests so important for measuring the development of older children? (T 131)

22. What is meant by readiness? (T 131)

23. What variables influence reading readiness? (T 132-133)

24. What influence does preliminary training have on reading readiness? (T 133)

Chapter 5

LEARNING I

1. What is meant by learning? (T 140-141)

2. How is learning related to motivation? (T 141-147)

3. What did the following men contribute to the history of psychology? (T 142-143)

   a. Ebbinghaus
   b. Pavlov
   c. Watson
   d. Thorndike
   e. Kohler

4. How many different kinds of learning have been proposed by Hull, Tolman and Lewin? (T 143-144)

5. What is the general form of the learning curve according to Thorndike? (T 144-145)

6. How is this curve different for simple and complex learning? (T 145-146)

7. What does Hebb mean by primary and secondary learning? (T 146)

8. What variables distinguish the learning of older children from that of younger children? (T 146)

9. What basic generalization can be made about learning ability and psychological maturity? (T 147)

10. What needs are present at birth, and how do they change with age? (T 147-148)

11. What is meant by primary and secondary drive? (T 147-148)

12. What are some of children's social needs? (T 148-149)

13. What influence do verbal and material rewards have on learning? (T 149-151)

14. What influence does intermittent reinforcement have on learning? (T 151)

15. What is meant by extrinsic and intrinsic motivation? (T 151)

16. What kinds of behavior can be explained by conditioning? (T 152)

17. What is meant by the following terms? (T 152-156)

a. classical conditioning
b. instrumental conditioning
c. unconditioned stimulus
d. unconditioned response
e. conditioned stimulus
f. conditioned response
g. motivation
h. reinforcement
i. experimental extinction
j. spontaneous recovery
k. facilitation
l. inhibition
m. disinhibition
n. generalization
o. discrimination

18. How early in life can human beings be conditioned? (T 156-159)

19. How early do social needs appear in human beings? (T 160)

20. What is meant by imprinting, and how is it different from conditioning? (T 160-162)

21. What influence do age and intelligence have on conditioning? (T 162-163)

22. What is meant by experimental neuroses? (T 162-163)

23. What are some practical applications of conditioning? (T 163-164)

24. How did Watson explain the development of emotional responses? (T 164-165)

25. How did Jones eliminate fear responses in children? (T 165-166)

26. What evidence is there that learning in one area can interfere with learning in another? (T 166-167)

27. What basic variables influence discrimination and generalization? (T 166-167)

28. How do the following specific variables influence stimulus discrimination and generalization? (T-167-173)

a. Stimulus quality
b. Manner of presentation
c. Non-reward and punishment
d. Type of reinforcement
e. Conceptual and verbal skills

29. How does the number of reinforcements, age of the child, and verbal training, influence the gradient of stimulus generalization? (T 173-175)

30. What is the difference between stimulus and response generalization? (T 166-178)

31. What contributions did Skinner make to the study of learning? (T 176)

32. What influence do awareness and intermittent reinforcement have on instrumental conditioning in children? (T 176-178)

Chapter 6

LEARNING II

1. What is meant by the following terms? (T 185)

   a. Trial and error
   b. Law of effect
   c. Frequency and recency

2. What influence do the following variables have on trial and error learning? (T 185-190)

   a. Past experience
   b. Restriction of cues
   c. Instruction and guidance
   d. Complexity of the task

3. What influence does practice have on simple and complex learning? (T 190)

4. What influence do age and intelligence have on complex learning and problem solving? (T 190-192)

5. How is trial and error learning different from insight. (T 192-194)

6. What conditions stimulate the use of insights in problem solving? (T 194)

7. What is meant by transposition? (T 194-195)

8. How does behavior theory explain transposition? (T 195)

9. What influence do age and verbal skills have on transposition?

10. What influence does level of motivation have on problem solving? (T 198-199)

11. What influence do the following variables have on complex learning? (T 199-202)

    a. Extrinsic and intrinsic motivation
    b. Withdrawal of attention and approval
    c. Appropriateness of reward
    d. Promise of future reward
    e. Verbal reinforcement

12. What influence does age have on memory and forgetting? (T 202-203)

13. What influence does formal academic training at a very early age have on later recall? (T 204-206)

14. What are some characteristics of childhood memories recalled in later life? (T 207)

15. What is the difference between forgetting and repression? (T 207)

16. What influence does pleasantness and unpleasantness have on recall? (T 207-208)

17. What is meant by reminiscence? (T 207-210)

18. What kinds of material are most influenced by reminiscence? (T 208-209)

19. What influence does intelligence have on memory? (T 210)

20. What is meant by transfer? (T 210-211)

21. How does transfer explain insight and forgetting? (T 210-211)

22. What do psychologists advise concerning the teaching of subjects like Greek and Latin? (T 211)

23. What influence do the following variables have on transfer? (T 211-213)

    a. Knowing a principle
    b. Overview of the problem
    c. Physical similarity
    d. Method of motivation

24. What do psychologists advise concerning the use of deductive and inductive teaching methods? (T 213)

25. What is meant by learning set? (T 213-216)

Chapter 7

MOTOR DEVELOPMENT

1. What influence does motor development have on personality? (T-223-224)

2. What contribution did Galton make to the history of psychology? (T 224)

3. Why did the study of motor development precede other aspects of psychological growth? (225)

4. What are the general trends in early motor development? (T 225-230)

5. How early in life do the following motor skills appear? (T 230-232)

a. sitting	c. standing	e. running
b. creeping	d. walking	f. skipping

6. What is meant by crawling, creeping and hitching? (T 233)

7. What influence does maturation have on posture and locomotor development? (T 230-232)

8. What characteristics are typical of early upright locomotion? (T 236-237)

9. What basic changes occur in the development of prehensile skills? (T 239-241)

10. How did Plato and Aristotle differ in their explanations of handedness? (T 241)

11. What is meant by cerebral dominance? (T 242)

12. How do psychologists explain the prevalence of right handedness in our culture? (T 242-243)

13. How early in life does the consistently dominant use of our hands appear? (T 243)

14. What kinds of tests are used to measure handedness? (T 244-245)

15. How are scores on handedness tests distributed? (T 245-246)

16. What influence does handedness have on personality disorders? (246-247)

17. What should be done about left handed children in our predominantly right handed culture? (T 247-249)

18. What are the general trends in the development of coordination, endurance, speed, and strength? (250-254)

19. What influence does sex have on motor development? (T 255)

20. What variables influence the development of writing skills? (T 256-257)

21. What kinds of tests are used to measure the development of motor skills? (T 257-261)

22. What appears to be the best test of motor development at the present time? (T 260-261)

23. How well are different aspects of motor development related to one another? (T 261-262)

24. What influence do physical status and health have on motor development? (T 262-264)

25. What motivational conditions favor the acquisition of motor skills? (T 266)

Chapter 8

EMOTIONAL DEVELOPMENT

1. What are the major dimensions of emotional expression? (T 272-273)

2. What is meant by level of arousal? (T 272-273)

3. How is level of arousal related to cue function? (T 272-273)

4. What is meant by emergency function in regard to emotional behavior? (T 275-276)

5. How do children differ in their responses to emotional stress? (T 276-278)

6. What kinds of emotional behavior are present at birth? (T 278-282)

7. What changes in emotional behavior occur during infancy? (T 282-285)

8. What changes in emotional behavior occur during old age? (T 284)

9. How does the relationship between physiological and behavioral aspects of emotion change with age? (T 285-286)

10. What conclusions can be drawn from studies of emotional development with blind and deaf children? (T 287-288)

11. What kinds of behavior are associated with fear? (T 288-289)

12. What inconsistencies appear between feelings and behavior as children grow older? (T 288-289)

13. What are some of the physiological aspects of fear? (T 288-289)

14. How early in life do fear responses appear? (T 289-290)

15. How do children's fears change with age? (T 290-294)

16. How can children's fears be controlled? (T 294-297)

17. What kinds of behavior are associated with anger? (T 297)

18. What kinds of situations elicit anger? (T 297-298)

19. How early in life do anger responses appear? (T 298-300)

20. How does the frequency of anger outbursts change with age? (T 300)

21. What time of day do anger outbursts occur most frequently? (T 301)

22. How can children's anger be controlled? (T 301-302)

23. What kinds of behavior are associated with jealousy? (T 302)

24. What kinds of situations elicit jealousy? (T 303-304)

25. How can jealousy be controlled? (T 304).

26. What is meant by anxiety? (T 305)

27. What kinds of tests are used to measure anxiety? (T 305-308)

28. How is anxiety related to adjustment and intelligence? (T 306)

29. How can anxiety be controlled? (T 308-309)

30. What are the behavioral consequences of insecurity? (T 309)

31. How early do the pleasant and integrative emotions such as delight appear?

32. Is smiling caused by learning or maturation? (T 310)

33. How is smiling different from laughting? (310-311)

34. What kinds of situations elicit smiling and laughing? (T 311)

Chapter 9

COGNITIVE DEVELOPMENT

1. What is the difference between sensation and perception? (T 317-318)

2. What is meant by concept formation? (T 318)

3. What are the two ways that damage to the nervous system can lower intelligence? (T 318)

4. How are concepts related to language? (T 318-319)

5. How early in life do concepts of form appear? (T 320)

6. How does the potency of form and color in determining behavior change with age? (T 322-323)

7. How early in life do children recognize identical figures in different positions as the same? (T 324)

20. How does the frequency of anger outbursts change with age? (T 300)

21. What time of day do anger outbursts occur most frequently? (T 301)

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Chapter 9

COGNITIVE DEVELOPMENT

1. What is the difference between sensation and perception? (T 317-318)

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6. How does the potency of form and color in determining behavior change with age? (T 322-323)

7. How early in life do children recognize identical figures in different positions as the same? (T 324)

8. What influence do concepts of form have on reading? (T 324)

9. How do color matching and naming change with age? (T 324-326)

10. Do young children prefer to use position, form, or color in solving delayed reaction problems? (T 326)

11. What is meant by practical, empirical, and objective space? (T 327)

12. How well do children discriminate the internal parts of a configuration as opposed to extremes? (T 327)

13. How early in life do children know the directions on the compass?

14. How do children orient themselves when giving directions? (T 329)

15. What are the infants first experiences with concepts of space? (T 330)

16. How early in life do children estimate correctly the size of objects independent of distance? (T 330)

17. How long does the ability to estimate size continue to develop? (T 330)

18. How accurately do children judge middle sized as opposed to smallest and largest? (T 331)

19. How early in life do children discriminate between biggest, littlest, and middle sized? (T 331)

20. How early in life do nonverbal, non-digital, and conventional number concepts develop? (T 333)

21. How is rote counting related to the use of number concepts? (T 333)

22. How early in life does the ability to estimate intervals of time develop? (T 333)

23. How early in life do children answer the following questions? (T 335-336)

    a. What time is it?
    b. What month is it?
    c. What season is it?
    d. Is it morning or afternoon?
    e. What day of the week is it?
    f. What day of the month is it?

24. How early in life do children learn the days of the week and the months of the year? (T 336)

25. Where do children learn concepts of time? (T 336-337)

26. What is meant by autism, ego-centrism, and reciprocity in regard to concepts of physical causality? (T 337)

27. How early does the concept of physical causality develop? (T 337-341)

28. What variables influence the appearance of concepts of physical causality? (T 338-341)

29. What kinds of categories are most useful in describing development of causality? (T 338-339)

30. What is meant by animistic? (T 341)

31. What characteristics do children use to classify living and non-living objects? (T 341-342)

32. How do personal and social concepts develop? (T 342-343)

33. What evidence is there that motives influence perception? (T343-344)

34. What are the main variables in the development of concept formation? (T 344)

35. What is meant by vertical and horizontal in regard to concept formation? (T 346-347)

36. How does the mediation hypothesis explain concept formation? (T 347-348)

37. What are the signs and assigns? (T 347-348)

Chapter 10

LANGUAGE DEVELOPMENT

1. What specific activities are involved in a broad definition of language? (T 354)

2. What are the following informal theories of language development? (T 354-356)

   a. no - yes
   b. ding - dong
   c. bow-wow
   d. pooh- pooh
   e. yum - yum
   f. babble - luck

3. What is meant by phoneme expansion and contraction? (T 348)

4. How many different sounds can an infant make at birth? (T 358)

5. How does this ability change with age? (T)

6. How early in life do the sounds made by infants approximate those made by adults? (T 360-362)

7. What influence do intelligence, socio-economic status, and family constellation have on phoneme development? (T 362)

8. How early in life do infants say their first word? (T 365-366)

9. How does the size of children's speaking vocabularies change with age? (T 366-368)

10. What characteristics are typical of speech in young children? (T 369-370)

11. What variables influence rate and fluency of speech? (T 371-372)

12. What is meant by ego-centric and socio-centric in regard to language development? (T 375-376)

13. What function do questions serve for children as opposed to adults? (T 377-379)

14. How early in life are children usually taught to read? (T 379)

15. How do intelligence and sex influence reading ability? (T 379-380)

16. How do the size of children's reading vocabularies increase with age? (T 380-381)

17. What influence do the following variables have in language development? (T 382-387)

a. socio-economic status
b. environmental deprivation
c. formal education
d. adult stimulation
e. bilingual homes
f. family constellation

Chapter 11

INTELLECTUAL DEVELOPMENT

1. What is meant by intelligence? (T 394-395)

2. What are Thurstones primary mental abilities? (T 395-397)

3. What kinds of items are used on the Stanford Binet Intelligence Scale? (T 397-400)

4. How are these items chosen? (T 397-400)

5. What is meant by MA and I.Q.? (T 400-404)

6. How are they derived? (T 400-404)

7. How are intelligence tests for infants different from those for older children? (T 405-407 & 421)

8. How well do group and performance tests measure intelligence? (T 397-407 & 409)

9. How reliable is the Stanford Binet? (T 411-412)

10. What is its standard error measurement? (T 411-412)

11. How is level of I.Q. related to reliability and standard error of measurement? (T 411-412)

12. How well do tests predict intelligence during the infant, pre-school, and school years? (T 413-415)

13. What minimal program of routine testing can be recommended on the basis of the text? (T 419-420)

14. What is the relationship between CA and MA according to Terman, Thurstone, and Wechsler? (T420-424)

15. How does this influence derivation of I.Q.'s? (T 420-424)

16. What is the relationship between physical development and intelligence? (T 424-427)

17. How does the relationship change with age? (T 424-427)

18. How are geographical location and social class related to intelligence? (T 428-431)

19. What is the basis for this relationship? (T 428-431)

20. How are characteristics of foster and true parents related to children's intelligence? (T 430-434 and 442)

21. How similar are identical twins reared apart and reared together? (T 434-436)

22. What influence do the following variables have on intelligence? (T 435-446)

    a. Nursery school
    b. Environmental deprivation
    c. Physical and maturational factors
    d. Personality factors like aggressiveness and competition

23. What criteria are used to demonstrate the validity of intelligence tests? (T 446-447)

24. What are the characteristics of children with very high intelligence? (T 448-449)

Chapter 12

SOCIAL DEVELOPMENT

1. What is the major area of adjustment for human beings? (T 457)

2. What is meant by social behavior? (T 457-458)

3. What progress has been made in specifying the main variables in social behavior? (T 458-460)

4. How early in life do children begin to participate in social interactions? (T 460-461)

5. What influence does dependency have on social development? (T 461-462)

6. What influence does imitation have on social development? (T 463)

7. How does the concept of imitation fail to explain social development? (T 463)

8. What is meant by diadic sequence? (T 463-464)

9. What are the main stages of social development proposed by Piaget? (T 465)

10. How early in life do children participate in social interaction with their peers for its own sake? (T 466)

11. What is meant by parallel, associative and cooperative play? (T 467)

12. What influences do age and intelligence have on parallel, associative and cooperative play? (T 467-468)

13. How does socially dependent and independent behavior change with age? (T 468-469)

14. What is the significance of play for development? (T 470)

15. How do psychologists measure social maturity? (T 471-473)

16. What influences does intelligence have on social maturity? (T 473)

17. What is meant by selective independence? (T 473-474)

18. What influence does child centeredness and over-protectiveness have on dependency? (T 474-475)

19. How clearly are sex-roles identified in our cultures? (T 475)

20. Why do girls make a greater number of inappropriate sex-role choices than boys? (T 475-476)

21. What variables influence the establishment of social interaction? (T 476-477)

22. What variables influence the maintenance of social interactions? (T 477)

23. How do psychologists measure social interactions? (T 477-483)

24. What is meant by social acceptability? (T 483)

25. What is meant by stars, rejects, and isolates? (T 483)

26. How well do teachers judge social acceptability? (T 484)

27. What personality characteristics are typical of socially acceptable and unacceptable children? (T 484-487)

28. What is meant by unilateral and bilateral friendships? (T 487)

29. How does permanence of friendship change with age? (T 487-488)

30. What variables disrupt friendships? (T 488-489)

31. What kinds of behavior do children value in friends? (T 489-490)

32. What is meant by altruistic? (T 491-492)

33. How do psychologists measure altruism? (T 491-492)

34. How does altruism change with age? (T 492)

35. What variables increase the probability of competitive behavior? (T 493)

36. Do children prefer competition or cooperation? (T 494-495)

37. How does the reaction to competition change with age? (T 495)

38. How early in life do competition and cooperation develop? (T 495-496)

39. How do psychologists measure ascendancy? (T 496-497)

40. What influence does special training have on ascendancy? (T 497)

41. How does ascendancy change with age? (T 497)

42. What is meant by dominant and integrative behavior in regard to ascendancy? (T 498)

43. What influence do dominant and integrative behavior have on social interaction? (T 498)

44. How does special training, influence dominative and integrative behavior? (T 498-499)

45. What is meant by leadership? (T 499-500)

46. What kinds of behavior are characteristic of leadership? (T 500-501)

47. What variables influence leadership? (T 501-502)

48. How do boys and girls differ in their leadership behavior? (T 502)

49. What influence do acting out and frustration have on aggressiveness? (T 503)

50. Are overtly aggressive children more or less aggressive in fantasy than less aggressive children? (T 503)

51. What variables influence aggressiveness? (T 503-504)

52. How does the duration, expression, and frequency of social conflicts change with age? (T 504)

53. What variables influence social conflict? (T 505)

Chapter 13

ATTITUDES AND VALUES

1. What is meant by social attitudes and personal values? (T 514)

2. How do psychologists measure social attitudes? (T 515-516)

3. What are the characteristics of a good test of social attitudes? (T 516)

4. How do racial preferences change with age? (T 517-518)

5. How do negroes and white differ in their racial preferences? (T 518-519)

6. How are social attitudes influenced by direct contact with members of other racial groups? (T 520)

7. How early in life does perceptual discrimination between racial groups appear? (T521)

8. What variables influence perceptual discrimination between racial groups? (T 521-522)

9. How do preschool and primary school children learn racial prejudices? (T 522-523)

10. Why does contact with other racial groups fail to change social attitudes? (T 523)

11. What variables influence attitudes? (T 523)

12. How can racial attitudes be changed? (T 523-524)

13. What influence do personal values have on social adjustment? (T 524-527)

14. What is meant by value reasonance? (T 526)

15. How are personal values transmitted from society to the individual? (T 527-528)

16. How are values related to secondary needs? (T 528)

17. What influence do different religious, social and national groups have on personal values? (T 528-531)

18. What influence does gang membership have on personal values? (T 530)

19. How do personal values change with age? (T531-533)

20. How early do stable moral values appear in children? (532-536)

21. How does parental influence on moral values change with age? (T 536-537)

22. What are the models children use to form ideal-self images? (T 537)

23. How consistent is the characteristic of honesty? (T 539)

24. How does overt behavior influence moral values? (T 539)

25. What general variables influence honesty? (T 539-540)

26. Why do group memberships and movies often fail to influence personal values? (T 540-542)

27. What influence does social class have on honesty? (T 540-541)

28. What personality and motivational variables influence honesty? (T 542-544)

29. What suggestion do children and psychologist offer regarding teaching values of honesty? (T 543-547)

30. How is juvenile delinquency related to residential areas? (T 547-549)

31. How do aesthetic values change with age? (T 550)

32. How do psychologists measure aesthetic values? (T 550-551)

33. What kinds of aesthetic preferences do children have regarding pictures? (T 551-552)

34. What variables influence aesthetic values? (T 552-553)

Chapter 14

PERSONALITY

1. What is meant by personality? (T 560-561)

2. What are the centralists and peripheralists approaches to the study of personality? (T 561-563)

3. What is meant by nomothetic and ideographic? (T 563)

4. What is the basis of Gesell's approach to the study of personality? (T 563-564)

5. What is meant by the following terms?

   a. endomorph
   b. mesomorph
   c. ectomorph
   d. viscerotonia
   e. somatotonia
   f. cerebrotonia

6. How are physique and temperament related to one another? (T 564-567)

7. What is meant by id, ego, and superego? (T 568)

8. How are these personality structures related to one another? (T 567-568)

9. What are the ego-defenses? (T 568)

10. What are Freud's stages of development? (T 568-569)

11. What is meant by libido? (T 568-570)

12. What is meant by oral, anal, and genital character? (T 569-571)

13. How do these characters develop? (T 568-571)

14. What is meant by eclectic? (T 571)

15. What is the basis for Murray's approach to the study of personality? (T 571-575)

16. What are the following methods for the measurement of personality? (T 574-588)

   a. Ratings
   b. Inventories
   c. Doll play
   d. Rorschach
   e. TAT
   f. CAT
   g. Blacky Tests
   h. Situational Tests

17. What are the advantages and disadvantages of each of the preceding methods? (T 574-588)

18. What are the basic assumptions of projective testing? (T 577)

19. What kinds of different materials are used for projective tests? (T 577-585)

20. What are the basic assumptions of situational tests? (T 585-588)

21. What kinds of errors decrease efficiency of predicting later personality? (T 588)

22. How accurate are predictions of later personality as opposed to intelligence? (T 588)

23. What is meant by homeostasis? (T 588-589)

24. What evidence is there that personality development can be predicted from infancy to adolescence or early maturity? (T 589-590)

25. What is meant by adjustment? (T 590-591)

26. What is meant by normal adjustment? (T 590-592)

27. What is meant by developmental tasks? (T 592-593)

28. How do developmental tasks change from childhood to adolescence? (T 593-594)

29. What are the basic principles of adjustment? (T 594-595)

30. What kinds of different responses do children make to frustration? (T 599-600)

31. What is meant by the following terms? (T 600-602)

a. protection
b. introjection
c. conversion
d. isolation
e. repression
f. reaction formation
g. sublimation
h. rationalization

32. What are the basic principles of Dollards frustration-aggression hypotheses? (T 603-607)

33. What are the basic principles of Gestalt theory regarding frustration? (T 605)

34. What is meant by need-persistive and ego-defensive? (T 605)

35. What are the different kinds of reactions to frustration according to Rosenzweig? (T 605)

36. What is the Picture Frustration Test? (T 605-606)

37. What are the general consequences of poor adjustment? (T 607)

38. What are the most common patterns of maladjustment? (T 607)

39. What is meant by withdrawal? (T 608)

40. Why is withdrawal more serious than aggression? (T609)

41. What is meant by psychosomatic? (T 608-609)

Chapter 15

PARENT AND HOME INFLUENCES

1. How do psychologists measure parent-child interactions? (T 622-625)

2. What characteristics are typical of the following parent child syndromes? (T 625-630)

   a. Rejectant b. Indulgent c. Democratic

3. What influence does the relative importance of mother's as opposed to the father behavior have on development? (T 630-631)

4. What are the basic requirements of good mothering? (T 631)

5. What influences do lack of affection, over-protection, and sex have on dependency? (T 632)

6. How do mothers respond to their own as opposed to other children? (T 632-633)

7. What influence does criticism of her child have on a mother's behavior towards her child? (T 633)

8. What kinds of women are least likely to give their children enough attention and love? (T 633-634)

9. What kinds of women predispose their children toward emotional disorders? (T 634)

10. What influence does social class have on mothering? (T 634-635)

11. What influence does maternal deprivation have on development? (T 635-638)

12. What influence does absence of the father have on development? (T 638-641)

13. Why do psychologists study parent's attitudes toward child rearing as opposed to actual behavior? (T 641)

14. How do psychologists measure parent's attitudes toward child rearing? (T 641-643)

15. What influence do the following parental attitudes have on development? (T 643-644)

a. Punishing
b. Dominating
c. One's own history
d. Sex of Parent

16. What kinds of punishment are employed by middle-class parents? (T 644-645)

17. How do children attempt to circumvent parental authority? (T 645-646)

18. What kinds of parental attitudes are condusive to good and bad adjustment? (T 646-648)

19. How have parental attitudes changed in recent years? (T 647)

20. What influence does family constellation i.e., siblings, have on social development? (T 648-650)

21. What influence does the child's perception of the parent's child rearing attitudes have on development? (T 650-651)

22. What general advice can psychologists offer to parents and teachers regarding personality development? (T 654-655)

Chapter 16

INSTITUTIONAL AND CULTURAL INFLUENCES

1. What are the major cultural influences on development in the U.S.? (T 661-662)

2. What social institution has the most influence on development in the United States? (T 663-664)

3. What influence does preschool experience have on social development? (T 664-666)

4. What influence do teachers' approval and blame have on scholastic achievement? (T 667-669)

5. What influence do maladjusted teachers have on their pupils? (T 669-670)

6. How do children's attitudes towards school change with age? (T 671)

7. What characteristics do children feel are most desirable in teachers?

8. What influence does authoritarian and democratic leadership have on behavior? (T 672-678)

9. What influence does child training have on adult beliefs regarding the causes of illness? (T 680-681)

10. What influence does social class have on child-rearing and development? (T 683-685)

PART IV.

Psychology 371 - Form A, 1963

Evaluation Study Guide

Blood, Don F. Chapters for a text in The evaluation of educaitonal achievement, mimeographed. Chapter I. "Introduction," Chapter II, "The Determination of Educational Objective," Chapter III, "Validity, Relevance & Reliability," Chapter VIII, "The Selection of Test Items," Chapter X, "The Interpretation of Test Scores."

Green, John A. Teacher-made tests. New York: Harper and Row, 1963.

Lindquist, E. F. (Ed.). Educational measurement. Washington, D. C.: American Council on Education, 1951.

Remmer, H. H. & Gage, N. F. Educational measurement and evaluation. Revised. New York: Harper & Brothers, 1955.

Thomas, R. Murray. Judging student progress. (2nd ed.). New York: Longmans, Green and Co., 1960.

Wood, Dorothy Adkins. Test construction. Columbus, Ohio: Charles E. Merrill Books, Inc., 1961.

Making the classroom test. Educational Testing Service, 1961.

Short-cut statistics for teacher-made tests. Educational Testing Service, 1960.

In the following outline the reading listed first is required, the other readings are supplementary and in general are listed in order of their utility and ease.

A. The Nature of Evaluation

Readings:

Blood. Chapter 1.
Remmers. Chapter 1., pp. 1-22.
Thomas. Chapters 1 and 2, pp. 1-30.
Lindquist. Chapter 14, p. 533 f.

Study Questions

1. What is the distinction between discrete and continuous data?

2. What is the distinction and the relationship between measurement and evaluation?

3. What are the characteristics of measurement?

B. The Determination of Educational Objectives

Readings:

Blood. Chapter 2.
Lindquist. Chapter 5, p. 119f.
Remmers. Chapter 2, pp. 27-48.
Green. Chapter 1, pp. 1-12

Study Questions:

1. What is the distinction between "ultimate" and an "immediate" objective?

2. What is the distinction between a "teacher" and a "pupil" objective?

3. What is meant by "observable behavior"?

4. How can different test items involving the same basic information require different behavior from the pupil?

C. Validity: Relevance and Reliability

Readings:

Blood. Chapter 3.
Remmers. Pp. 122-142.
Lindquist. Chapter 15 and 16, pp. 560-694.

Study Questions:

1. What is meant by the reliability of a test?

2. What is meant by the relevance of a test?

3. What is meant by the validity of a test?

4. How are validity, relevance, and reliability related?

5. What kinds of factors influence the reliability of a test?

6. What kinds of factors influence the relevance of a test?

7. What are the three methods for estimating the reliability of a test and what kinds of factors influence each of these estimates?

8. How does a factor such as reading ability influence the validity of a test?

9. What effect does the length of time allotted for the administration of a test have on the validity of the test?

10. What is meant by logical relevance?

11. Why is it difficult to obtain empirically an estimate of the validity of an achievement test?

D. The Construction of Test Items

Readings:

Lindquist. Chapter 7, pp. 185-249.
Green. Chapter 3, pp. 23-41, Chapter 5, pp. 58-71.
Wood. Chapters 4, 5, 6,7, and 10.
Making the Classroom Test

Study Questions

1. What is the distinctive characteristic of a test situation?

2. What are the relative advantages and disadvantages of objectively scored and subjectively scored tests? How do these considerations relate to the validity of the tests?

3. In writing a test what should be the principal concern in determining the item form to be used?

4. What is the meaning of each of the following terms?

test item	true-false item
test exercise	multiple choice item
supply type item	matching exercise
selection type item	item stem
essay item	distractors
short answer item	item responses

You should be familiar with these terms as defined on the accompanying sheet.

5. What are the major technical faults which occur in items? These occur when items are written without sufficient care. You should be thoroughly familiar with Ebel's suggestions for writing test items as discussed in Lindquist, Educational Measurement, Chapter 7, and summarized in the mimeographed material.

You should be able to recognize these faults in items.

6. Of various technical faults which may occur in items, which are most detrimental to the operation of the item?

E. Observational Techniques

Readings:

Thomas. Chapters 8, 9, 10, 11, pp. 214-314.

Study Questions:

1. What advantage do anecdotal records have over casual observation?

2. What is the purpose of time sampling in the observation of students? What is the most efficient procedure for time sampling?

3. What are the characteristics of a good anecdotal record?

4. What is meant by the "halo" effect?

5. What types of measurement devices are most likely to be influenced by the "halo" effect?

6. What procedures should be followed in order to increase the reliability of rating scales?

7. What is the distinction between a check list and a rating scale? What kinds of characteristics are most readily measured by each?

F. Item Analysis

Readings:

Blood. Chapter 8.
Short-cut Statistics for Teacher-made Tests, pp. 2-10.
Wood. Chapter 9, pp. 81-92.

Study Questions:

1. What is the index of difficulty for a test item? How is it computed?

2. What is the rough index of discrimination? How is it computed?

3. What is the relationship between the rough index of discrimination and the index of difficulty? Given a specified index of difficulty and a specified number of cases, what is the maximum value of the rough index of discrimination which could be obtained?

4. What is the relationship between the index of difficulty and the index of discrimination on the one hand and the relevance of the test item on the other? What assumptions underlie this relationship?

5. From a complete item analysis how can you determine how well a distractor is operating?

6. What is the principal limitation of "correction for 'guessing'" formulas? What is the effect of the use of such formulas? Should the student be informed that such a formula is to be used prior to taking the test?

G. Standardized Tests

Readings:

Thomas. Chapter 4 and 5, pp. 91-162
Lindquist. Chapter 3, pp. 49-72. Chapter 5, pp. 142-149, Chapter 7, 9, and 10, pp. 195-282.

Study Questions:

1. What is a standardized test?

2. What advantages do standardized tests have over other tests? What advantages do teacher-made tests have over standardized tests?

3. What criteria should be used in selecting standardized tests? What are the best sources of information with relation to these criteria?

4. What information must you have before you can make adequate use of the norms from standardized tests?

H. The Interpretation of Test Results (Descriptive Statistics)

Readings:

Blood. Chapter 10.
Green. Chapter 9, pp. 119-135.
Thomas. Chapter 7, pp. 192-213.
Remmers. Chapter 21, pp. 568-612.

Study Questions:

1. What is the meaning of each of the following terms applied to the form of a frequency distribution?

symmetrical
positively skewed

negatively skewed
unimodal
bimodal
J-shaped
U-shaped
rectangular

2. What is meant by the percentile rank of a score in a distribution?

3. What is a percentile in a distribution?

4. Under what conditions is a percentile rank an indication of "good" or "poor" performance?

5. Under what conditions are percentile ranks directly comparable one to another?

6. What is the relationship between the frequency in a given part of a distribution and the distance between percentiles in that part?

7. What is the relationship between the frequency in a given part of a distribution and the area of a graph of that distribution?

8. What, in general, is the use of an average?

9. Given a limited number of scores, (up to 10) you should be able to compute the mean, the median, and the mode.

10. What is the relationship between the form of a distribution and the numerical values of the mean, median, and mode?

11. What effect will increasing or decreasing a score in a distribution have on the mean? Under what conditions will such a change effect the median?

12. When is the mean the most appropriate measure of central tendency? When is the median the most appropriate?

13. What, in general, is the use of a measure of variability?

14. What effect will increasing or decreasing a score in a distribution have on the standard deviation?

15. In comparing graphs of different distributions drawn on the same scale how can you estimate the relative size of the standard deviations?

16. In combining a number of test scores into a single composite score, what is the relationship between the mean of a test and the relative weight of that test in the composite? What is the relationship between the standard deviation and the relative weight?

17. Given the mean and standard deviation of a distribution of scores you should be able to compute the z-score equivalent of a specified score.

18. What are the relationships among percentile rank norms, grade or age equivalent norms and standard score norms?

Psychology 371 - Form B - 1965

Evaluation in the Public Schools

One of a teacher's most important tasks, no matter what grade or subject taught, is evaluating students. Evaluation includes both informal and formal techniques. In this course those techniques, mostly formal, that provide information that is most useful to teachers will be stressed. They include teacher-made achievement tests, methods of observation and standardized tests of achievement and aptitude.

Part of your job in Psychology 371 will be to learn how to build good achievement tests. Learning about how to build them would not help you much when you faced the task as a teacher. Another 'how to' will be how to observe children's behavior as it occurs spontaneously. The only part of your job that is restricted to learning about something is with regard to standardized tests. But even then, you will be expected to learn how to tell a good test from a poor one, an appropriate one from one that is not appropriate for a particular evaluation task.

You will find a guide for learning how to do what you are expected to do in the following pages. There are three reasonably independent parts to the guide as there are three parts to your job in the course. You may approach them in the order suggested or any other order. Also, you may demonstrate your ability to do the required tasks whenever you feel competent. The references cited are to aid you as you need them: they are not required readings. You are encouraged to seek help through consultations (particularly, while learning to build a test) with Dr. Laidlaw or Dr. Elich during hours scheduled for this purpose each quarter. In addition, lectures on standardized tests will be scheduled toward the end of each quarter.

Each of the three major tasks involved in the course will contribute a different amount to your course grade: Task A, 50 per cent; Task B, 20 per cent; and Task C, 30 per cent. You should keep this in mind as you schedule your time and effort.

Task A: Teacher-made achievement tests.

Each of the numbered steps below must be completed in order. Each will result in a product that must be approved before the next one is undertaken.

Step 1. Instructional objectives.

a. Select a unit of instruction in your area of professional interest.

b. Describe in writing, in terms of ability, experience and other relevant characteristics the students with whom you will be concerned.

c. State in appropriate terms a set of objectives for the unit you have selected.

References:

Ebel, R. L. Measuring Educational Achievement. Englewood Cliffs, N.J.: Prentice-Hall, 1965. Ch. 2.

Lindquist, E. F. (ed) Educational Measurement. Washington: ACE, 1951, Ch. 5.

Mager, R. F. Preparing Objectives for Programmed Instruction. San Francisco: Fearon, 1962. All.

Step 2. Test Outline.

a. Select appropriate materials as sources for subject matter content for your test.

b. Construct a test outline or "blue print" that relates subject matter content to your objectives (1b).

References:

Davis, F. B. Educational Measurements and Their Interpretation. Belmont, California: Wadsworth, 1964, Ch. 12.

Ebel, Ch. 3.

Lindquist, Ch. 6.

Thorndike, R. L. & Hagen, Elizabeth. Measurement and Evaluation in Psychology and Education. (2nd ed.) New York: Wiley, 1961. Ch. 3.

Step 3. Test Items.

a. Choose the type of test item most appropriate for measuring each of your objectives.

b. Write test items and develop an item pool.

References:

Ebel, Chs. 4, 5 & 6.

Educational Testing Service. Making the Classroom Test. Princeton: ETS, 1961. All.

Lindquist, Ch. 7.

Thorndike & Hagen, Ch. 4.

Wood, Dorothy A. Test Construction. Columbus: Merrill, 1960. Chs. 4, 5 & 7

Step 4. Test.

a. Select the items from the item pool that will be used in the test.
b. Select an appropriate test format and organize the items in that format.
c. State in writing the instructions to be given to the students who take the test.
d. State in writing conditions under which the test should be administered.
e. Prepare a copy of the test as it would be administered.
f. Describe in writing the procedures to be used in scoring the test.

References:

Davis, Ch. 12.

Ebel, Ch. 7.

Lindquist, Chs. 8, 10 & 11

Thorndike & Hagen, Ch. 4.

Wood, Ch. 7.

Step 5. Test grading.

Since you will not have an opportunity to administer your own test, you will be given a set of test scores to use in the following sub-tasks.

a. Given a set of test scores, construct a frequency distribution.
b. Compute the appropriate measure of central tendency and measure and dispersion to describe the test scores.
c. For the group and objectives for which the test you constructed was intended, assign appropriate letter grades to test scores.

References:

Davis, Ch. 13.

Ebel, Chs. 8 & 13.

Educational Testing Service. Short-cut Statistics for Teacher-made Tests. Princeton: ETS, 1960. All.

Wood, Ch. 8.

Step 6. Test analysis.

Given the frequency of passing answers for each item included in the test for which you have scores:

a. Compute the item difficulty indice for each item.
b. Compute the item discrimination indice for each item.
c. Using the item data (6a) and the appropriate measure of test score dispersion (5b), compute the reliability coefficient for the test using Kuder-Richardson Formula 20.

References:

Ebel, Chs. 10 & 11.

ETS, All.

Lindquist, Ch. 15.

Wood, Ch. 9.

Step 7. Test evaluation and revision.

a. For each item indicated with an asterisk, evaluate the adequacy of the item and make required changes in the item when necessary.
b. Using the results of 6 and 7, a, evaluate in writing the adequacy of the test as a measuring device.
c. Given a key relating the test items (7a) to test objectives, evaluate in writing the comparative success of measuring each objective and the classroom instruction to accomplish each.

References:

Davis, Ch. 12.

Ebel, Chs. 9 & 12.

Thorndike & Hagen, Ch. 4.

Wood, Ch. 7.

Upon acceptable completion of Step 7, you have completed Task A. Organize all of your materials for Task A and turn them in to Drs. Laidlaw or Elich for evaluation and grading.

Task B: Classroom Observation.

Each of the numbered steps below must be completed in order. Each will result in a product that must be approved before the next one is undertaken.

Step 1. Observation objectives.

a. Select a behavior or set of behaviors that is the object of a unit of instruction in your area of professional interest.
b. Describe in writing, in terms of ability, experience and other relevant characteristics the student(s) with whom you will be concerned.
c. State a set of specific instructional objectives the accomplishment of which can be evaluated effectively by direct observation.

References:

Almy, Millie. Ways of Studying Children. New York: Teachers College, 1959. Chs. 1 & 2.

Thomas, R. M. Judging Student Progress. New York: Longmans, 1960. Ch. 8.

Mager, All.

Step 2. Observation plan.

a. Select appropriate references as sources of subject matter content or behavior descriptions for the object of your observation.
b. Construct an observation plan that relates subject matter, skills, or other behaviors to your instructional objectives.

References:

Almy, Chs. 3, 4, 5, & 6.

Thomas, Chs. 8, 9, 10, & 11.

Step 3. Observation schedule.

a. Select the observation technique most appropriate for assessing accomplishment of each of your objectives.
b. Describe in writing each of your observation procedures.
c. Construct an observation schedule, including all of your procedures, to be used in making your observation.

References:

Almy, Chs. 2, 3, 4, 5, 6 & 7.

Thomas, Chs. 8, 9, 10, 11 & 12.

Step 4. Observation

a. Arrange to observe student(s) who fit your description (1b) and for whom your objectives (1c) are relevant.
b. Observe student(s).
c. Write a report (a) describing the observed behavior, with reference to your objectives, and (b) evaluating the behavior. Include an assessment of the effectiveness of your observation.

References:

Almy, Chs. 4 & 7.

Thomas, Chs. 12 & 13.

Upon acceptable completion of Step 4, you have completed Task B. Organize all of your materials for Task B and turn them in to Dr. Laidlaw or Dr. Elich for evaluation and grading.

Task C: Standardized Tests

Your work with respect to standardized tests will prepare you to take a comprehensive examination covering several essential characteristics of these tests and the ways that they can be used effectively. Your performance on this test will make it possible to predict your ability to use standardized tests when you are a teacher.

Under each sub-heading below you will find questions to guide your study of the references cited.

Sub Task I. Qualities of Measurement

a. Validity

1. What is meant by test relevance?
2. What is meant by logical relevance?
3. What factors influence test relevance?
4. What is meant by test validity?
5. What are the several types of test validity?
6. What qualities are desired in a criterion measure?
7. How are validity coefficients interpreted?
8. What factors influence test validity?

b. Reliability

1. What is meant by test reliability?
2. What are the three common methods for estimating the reliability of a test, and what factors influence each of these estimates?
3. How are coefficients of reliability interpreted?
4. What factors influence the reliability of a test?
5. How high must the reliability of a measurement be?
6. What is the standard error of measurement, and how is it related to the reliability of a test?
7. What is the relationship between the reliability and the validity of a test?

References:

Lindquist, Chs. 14, 15, & 16.

Thorndike & Hagen, Ch. 7.

Wood, Chs. 3 & 4.

Sub-Task II. Standardization

1. What is a standardized test?
2. What advantages do standardized tests have over other tests? What advantages do teacher-made tests have over standardized tests?
3. What criteria should be used in selecting standardized tests? What are the best sources of information with relation to these criteria?
4. What information must you have before you can make adequate use of the norms from standardized tests?

References:

Davis, Chs. 3, 5, & 6.

Thomas, Chs. 4 & 5.

Thorndike and Hagen, Chs. 8, 9 & 10.

Lindquist, Chs. 3, 5, 7, 9 & 10.

Sub-Task III. Interpreting Standardized Test Performances

1. Define each of the following terms used to describe frequency distributions:
   symmetrical
   skewed
   unimodal
   bi-modal

2. What is meant by the percentile rank of a score in a distribution?
3. What is a percentile in a distribution?
4. Under what conditions are percentile ranks directly comparable one to another?
5. What is the relationship between the frequency in a given part of a distribution and the distance between percentiles in that part?
6. What, in general, is the use of an average?
7. What is the relationship between the form of a distribution and the numerical values of the mean, median, and mode?
8. What, in general, is the use of a measure of variability?
9. Given the mean and standard deviation of a distribution of scores, you should be able to compute the standard score, CEEB score, and Z-score equivalent of a specified score.
10. What are the relationships among percentile rank norms, grade or age norms, and standard score norms?

References:

Davis, Chs. 2, 8, 9, 10 & 11.

Thomas, Ch. 7.

Thorndike and Hagen, Chs. 5 & 6.

When you have completed the preparation outlined for Task C, arrange with Dr. Laidlaw or Dr. Elich to take the comprehensive test covering standardized tests.

LECTURE SERIES - INDEPENDENT STUDY

ADJUSTMENT	MONDAYS	LECTURER	TOPIC
October 5		Dr. Thompson	Adjustment Concept
October 12			Motivation & Emotion
October 19			Conflict & Frustration
October 26			Anxiety and its Effects
November 2			Behavioral Patterns of Adjustment
November 9			Behavior Pathology & Therapeutic Techniques
November 28			Personality
November 30			Measurement of Personality

LEARNING	WEDNESDAYS	Dr. Elich
September 30		Definitions & Methods of Study
October 7		Conditioning & Reinforcement
October 14		Generalization, Discrimination and Motivation
October 21		Conditions of Practice
October 28		Transfer of Training
November 4		Retention & Forgetting
November 18		Cognition, Problem Solving and Verbal Behavior
December 2		Question Session

CHILD DEVELOPMENT	THURSDAYS	Dr. Lincholm
October 1		Theories & Methods, Chapt. 1 and 2 in Thompson
October 8		The Neonate & Maturation Ch. 3 & 4 Thompson
October 15		Learning and Development Ch. 5 & 6 in Thompson

October 22	Motives & Emotional Development Ch. 7 & 8
October 29	Cognitive & Language Development Ch. 9 & 10
November 5	Intellectual Development Ch. 11 in Thompson
November 12	Social Development I Ch. 12
November 19	Social Development II, Ch. 13 & 14
December 3	Cultural & Home Influence Ch. 15 & 16 in Thompson

EVALUATION	TUESDAYS	Dr. Blood	TOPIC
September 29			Evaluation, measurement & objectives of Instruction
October 6			Test validity (answers to questions.
October 13			General approach to test construction
October 20			Comparison of Item Forms
October 27			Supply type Items
November 3			Selection Type Items
November 10			Observational Techniques
November 17			Standardized tests
November 24			Statistics (Questions)
December 1			General Questions

The lectures listed above and on previous pages will be given at 4:00 p.m. in Lecture Hall 2.

The first examination this quarter will be given Monday, November 16, at 4:00 p.m. in Lecture Hall 2. All four area examinations will be given on that date, students who intend to take more than one area exam should make an appointment for the second examination with Mrs. Sargent in Room 200, Old Main.

You must present your Independent Study Reading Library Card and Student Body card with picture to be admitted to the exam.

The second administration of the exams will be on January 6 and 7, the first week of winter quarter.

INDEPENDENT STUDY PROGRAM IN PSYCHOLOGY
WESTERN WASHINGTON STATE COLLEGE

1. The Independent Study Program is available only to students in teacher education.

2. The program includes the three courses in psychology required of teachers: Psychology 351 (Human Learning), 3 credits, Psychology 352 (Child Development and Personality), 5 credits, and Psychology 371 (Evaluation), 3 credits. Enrollment should be in the order in which they are listed.

3. The student choosing Independent Study will be provided with detailed study guides keyed to readings available in a special reserve collection, schedules of lectures and discussion sessions, and schedules of faculty available for individual consultation and small group seminars.

4. Competency examinations can be taken whenever the student has completed any one of the courses. The student may proceed through the program as rapidly or as slowly as he wishes, adjusting his work in Independent Study to periods when his regular class load is lightest.

5. If the student fails to pass an examination, he will be given a second opportunity to take a comparable examination after advisement of his areas of weakness and suggestions for subsequent study.

6. Grades are recorded on the student's transcript each quarter for the areas passed with a "C" level or above unless he elects to retake an examination to attempt to raise his grade. No "D" or "F" grades will be recorded on the student's transcript.

7. Students electing Independent Study may withdraw from the program at any time and enter the traditional class program with no loss of credit for areas successfully completed. Withdrawal requires notification of the Department of Psychology.

8. Enrollment of eligible students is accomplished by registration and payment of fees at the Department of Psychology, Room 200 Old Main. Students intending to enroll should not register through the Registrar's office for any of the regular courses in this sequence.

9. The fee is $4.00 for the first course and $3.00 for each additional course, which covers the cost of all books, readings, and testing.

10. Further information regarding the program is available through the Psychology Department, Room 200 Old Main.

Peter J. Elich, Director
Independent Study Program

APPENDIX B

SAMPLE ITEMS

Personality and Adjustment

1. The statistical approach to defining normal would:
   1. view the genius as abnormal as the feeble-minded.
   2. view the unusual as undesirable.
   3. place emphasis on the degree of personal adjustment.
   4. take into consideration long-range "social good."

2. One distinguishing difference between clinical studies and experimental studies in psychology is that in the experimental method:
   1. much greater use is made of statistical analysis.
   2. the behaviors to be observed are more clearly defined.
   3. hypotheses are advanced to guide the collection of data.
   4. events are made to occur in order that they might be observed.

3. In a certain study it was found that correlation between delinquency and absence from school was plus .80. This means that:
   1. about 80% of delinquents were in the habit of missing school.
   2. about 80% of these children who missed school were delinquent.
   3. that absence from school has tendency to cause delinquency.
   4. that absence from school and delinquency have a tendency to occur in the same individuals.

4. Which of the following is a common characteristic of behavior under severe stress?
   1. withdrawal or regression.
   2. increased flexibility of behavior.
   3. greater sensitivity to alternative responses.
   4. improved efficiency.
   5. more accurate perception.

5. The individual who endures delay, thwarting, or conflict without showing maladaptive behavior is said to:
   1. be emotionally flat.
   2. be emotionally maladjusted.
   3. have frustration tolerance.
   4. lack social responsiveness.

6. "I can't stand reading the text, but I don't want to fail the course." Which type of conflict does this illustrate?
   1. approach-approach conflict.
   2. approach-avoidance conflict.
   3. avoidance-avoidance conflict.
   4. double approach-avoidance conflict.

7. Ascribing to others our own unacceptable motivations characterizes:
   1. regression
   2. projection
   3. denial of reality
   4. rationalization
   5. substitution

8. Where there is a history of mental illness in the individual's family background (e.g. parents):
   1. the individual will probably become mentally ill at some time during his life.
   2. it is highly probable that subsequent children will experience mental illness.
   3. it is likely that environmental factors have contributed to this condition.
   4. it is likely that he has inherited recessive genes carrying the particular type of mental illness.

9. Behavior mechanisms might best be interpreted as:
   1. learned responses which reduce fear or anxiety.
   2. innate responses which are respondents to specific eliciting stimuli.
   3. involuntary respondents which have been classically conditioned.
   4. voluntary responses learned from association with other persons.

10. The earliest stage of psychosexual development as viewed by Freud is one in which the child derives his most important satisfactions from:
   1. masturbation
   2. oral activity
   3. anal activity
   4. contact with the parent of the opposite sex

Human Learning

1. Which of the following statements best describes the relationship between learning and performance?
   1. learning and performance are essentially the same.
   2. while learning and performance are both observable, learning is more permanent and consistent than performance.
   3. performance is observable while learning is non-observable, learning is inferred from performance.
   4. learning refers to improvement in performance, while performance is merely behavior of any type.

2. The frequency of occurrence of an operant prior to conditioning is called:
   1. the base operant level
   2. the generalization gradient
   3. the gradient of the operant
   4. one of the given answers

3. Intermittently reinforcing the temper tantrums of a child will have what effect on the resistance to extinction of this behavior?
   1. increase
   2. decrease
   3. have no effect
   4. an unpredictable effect

4. When responses that were formerly reinforced are no longer reinforced the eventual result is:
   1. increased motivation
   2. negative reinforcement
   3. extinction of the respcases
   4. spontaneous recovery

5. In some early conditioning experiments where a certain tone was used as the conditioned stimulus, it was discovered that the conditioned response would also appear to a tone of slightly higher or lower pitch. This phenomenon is known as:
   1. stimulus generalization
   2. response generalization
   3. instrumental conditioning
   4. higher-order conditioning

6. The most generally accepted definitions of learning say nothing about:
   1. permanence of behavior
   2. practice
   3. improvement in behavior
   4. change of behavior

7. Which of the following factors would be likely to facilitate positive transfer?
   1. the meaningfulness of the material is high
   2. the similarity of the two learning tasks is low
   3. the second task is overlearned
   4. the learning tasks are short

8. A teacher operating under the faculty theory of mental development would most likely place a great deal of stress upon:
   1. subjects such as mathematics for improving reasoning
   2. group activities
   3. development of social skills
   4. the promotion of independent study skills

9. The most important single determiner of the extent of transfer effects is:
   1. the similarity factor
   2. the level of learning
   3. meaningfulness of the material learned
   4. mental discipline

10. When a child has been bitten by a large black dog and now has an intense fear of almost all animals, this phenomenon can be explained by:
    1. classical conditioning and stimulus generalization
    2. conditioning of an instinctive fear
    3. instrumental conditioning and the general law of effect
    4. discrimination learning which is reinforced by staying away from all animals

Child Development

1. Rousseau was a philosopher who continues to exert an influence on child care and training practices. His point of view could be summarized as follows:
    1. human nature is essentially selfish, thus the child must be carefully taught and restricted by social pressure to curb selfish desires
    2. child training consists of directing the reforming of habits and the curbing of the child's natural impulses
    3. the environment determines thebbehavior of the individual, thus adequate child training involves the proper manipulation of life experiences.
    4. human nature is essentially good, thus, the child should be permitted freedom to express his natural impulses

2. The most adequate control of maturational variables in studies of the effects of environment factors on children's psychological growth and behavior can be achieved through use of the:
    1. matched groups method
    2. psychological method
    3. depth-interview method
    4. co-twin method

3. The process by which hereditary factors make their appearance in the organism is called:
    1. maturation
    2. environmental deprivation
    3. learning
    4. practice

4. A comparison of the sequence of maturational development with the rate of maturational development reveals that in different children:
    1. the sequence is similar, although the rate may be different
    2. the sequence and rate are the same
    3. the rate is similar although the sequence is different
    4. both rate and sequence differ with the individual child

5. In a distribution of IQ's for a large sample of the general population, it is safe to predict that:
    1. there will be more persons below 100 than above
    2. the largest number of persons (for any ten-point interval) will fall between 80 and 90
    3. there will be as many persons above 130 as below 70
    4. all of the preceding statements will be true

6. Johnny has an IQ of 130 and James an IQ of 95. As they progress through school the differences between them in school achievement could be expected to:
   1. decrease
   2. increase
   3. remain about the same
   4. decrease until about the age 16, then remain the same

7. McGraw found that the experimental twin subject who received systematic training in bladder control before six months of age:
   1. profited little, if any, from the training
   2. profited substantially from the training
   3. achieved complete bladder control three months earlier than the control twin
   4. showed signs of emotional maladjustment due to this training

8. A child's response that "we make the clouds move by walking" illustrates Piaget's developmental concept of:
   1. ego-centrism
   2. relativity
   3. autism
   4. socio-centrism

9. In language development (vocabulary size, reading ability, etc.):
   1. boys are superior to girls at all ages
   2. girls are superior to boys at all ages
   3. girls and boys are essentially equal (only chance differences are found)
   4. girls are superior to boys until five or six years of age, then boys become superior to girls

10. In general, the following group of children may be expected to show the most rapid gains in language growth during the preschool years:
    1. singletons
    2. children with younger siblings
    3. children with older siblings
    4. fraternal twins

Evaluation and test construction

1. What is meant by the "halo" effect?
   1. The influence of one rater upon another
   2. The tendency to rate a person higher when you know him better
   3. The tendency to make ratings too high
   4. The spread of general impressions of a person to the rating of special characteristics

2. Which of the following precautions would be least effective in improving the reliability of an observational technique?
   1. Select certain limited aspects of behavior to observe
   2. give observers practice and instruction in identifying
   3. divide the observation period into short segments for recording and scoring purposes
   4. remember the significant details of behavior and record them at the end of the observation session

3. What is the principal advantage of standardized achievement tests over teacher-made tests?
   1. They are more valid measures of achievement
   2. They supply standards for course content
   3. They permit comparisons of performance with larger groups of pupils
   4. They are administered under controlled conditions

4. If a teacher wanted to determine how well a standardized test would measure the objectives which he had been trying to teach, what should he do?
   1. Study the manual for the test
   2. Examine a copy of the test form
   3 Read critical reviews of the test
   4. Investigate recent studies in which the test had been used

5. Given scores: 2, 4, 6, 8, 30, the mean score is:
   1. 4
   2. 6
   3. 8
   4. 10

6. Miss Jones finds that the average score of her fourth grade class on a reading test is below the average score listed on the table of norms. What is the most logical conclusion from this observation?
   1. Miss Jones has failed to bring the reading level of her class up to acceptable standards
   2. The ability level of the class must be below average
   3. The class needs more intensive work in reading
   4. The reading level of the class is not as high as that in other schools

7. The Navy reports aptitude test results in terms of standard scores with a mean of 50 and a standard deviation of 10. A recruit with a mechanical comprehension score of 70 is a candidate for a machinist training. On the basis of this score he would be judged:
   1. a very promising candidate
   2. within the usual range of candidates
   3. a borderline case
   4. a definite poor risk

The following information relates to items 8-10.

A certain arithmetic test has been standardized on the basis of the performance of 3000 seventh, eighth, and ninth grade students (1000 at each grade level) in twenty schools selected at random from the schools in Washington State. The distribution of these scores at each grade level is normal.

This test is administered in a junior high school in your district at the beginning of the school year. The mean score for the 8th grade in this school is 43.0 which has a grade equivalent score of 8.3 on the norms accompanying the test. In this group the distribution of scores is unimodal and symmetrical.

8. Al's score has a percentile rank of 50 in the 8th grade standardization group. What is his grade equivalent score:
   1. 8.3
   2. 8.0
   3. 7.7
   4. It is impossible to tell from data given

9. Bill receives a grade equivalent score of 7.3; what is the percentile rank of his score in the 8th grade standardization group:
   1. 50
   2. 45
   3. 40
   4. 35
   5. It is impossible to tell from the data given

10. Doug obtains a grade equivalent score of 7.5; Earl's score has a percentile rank of 75 in the 8th grade standardization group. What conclusion can be drawn concerning the scores of these two boys?
   1. Doug's score is higher than Earl's
   2. Earl's score is higher than Doug's
   3. The two boys received the same score on the test
   4. The data are insufficient to permit a conclusion

APPENDIX C

EDUCATIONAL PSYCHOLOGY

EVALUATION

Part A

1. Learning is most generally defined as a relatively permanent change in behavior which occurs as a result of:
   1. maturation
   2. experience
   3. thinking
   4. schooling

2. Under which of the following conditions of reinforcement is acquisition of new behavior likely to occur most rapidly.
   1. 100% or continuous reinforcement
   2. Fixed ratio or fixed interval reinforcement
   3. Variable ratio or variable interval reinforcement
   4. Partial reinforcement

3. A consequence of a behavior which results in an increase in the strength of the response which produced it is called:
   1. an unconditioned stimulus
   2. a punishment
   3. a reinforcer
   4. an operant

4. Which of the following methods of measuring retention would be most likely to show even the slightest trace of earlier learning?
   1. Recall
   2. Recognition
   3. Relearning
   4. Reconstruction

5. When we observe that learning such as verbal and mathematical skills acquired in childhood are still retained as adults, it is highly probable that this continued retention was produced by:
   1. original intent to learn
   2. skillful teaching
   3. meaningful original learning
   4. frequent use and application of these learnings

6. Most psychologists would accept which of the following?
   1. The view that learning is a continuous as opposed to discontinuous (or sudden) process
   2. The empirical law of effect
   3. The theoretical law of effect
   4. The drive-reduction hypothesis

7. The reduction of an emotional state such as high anxiety serves to reinforce a pattern of behavior. The emotional state is referred to as:
   1. a positive reinforcer
   2. a negative reinforcer
   3. a reward
   4. catharsis

8. Compared to continuous reinforcement, partial reinforcement results in:
   1. learning which is more resistant to extinction
   2. learning which is less resistant to extinction
   3. learning which is forgotten more easily
   4. faster learning

9. Which of the following is the most accurate statement of the effect of punishment upon behavior?
   1. Punishment weakens responses.
   2. Punishment serves the same effect as extinction.
   3. Punishment temporarily depresses the strength of a response.
   4. Punishment weakens strong responses, but often reinforces weak responses.

10. Which of the following statements best describes the relationship between learning and performance?
   1. Learning and performance are essentially the same.
   2. While learning and performance are both observable, learning is more permanent and consistent than performance.
   3. Performance is observable while learning is not observed. Learning is inferred from performance.
   4. Learning refers to improvement in performance, while performance is merely behavior of any type.

11. When a pattern of behavior which has been reinforced continuously is no longer followed by reinforcement, what will be the eventual result?
   1. Motivation will increase.
   2. The response will be extinguished.
   3. The behavior will continue to occur at a constant rate.
   4. The effect of stopping reinforcement is not predictable.

12. Which of the following statements best describes the relationship between practice and learning?
   1. The more practice the greater the learning.
   2. Practice has little if any relationship to learning.
   3. Practice is directly related to learning, but only if the learner is highly motivated.
   4. Practice results in learning only if feedback is provided the learner.

13. The great majority of human fears are:
   1. Innate and passed to new generations by heredity.
   2. Learned from stories told by peers and adults.
   3. A function of maturation and characteristic of almost all human beings.
   4. Learned as a result of experience.

14. Positive transfer occurs most readily when the original learning situation and the transfer situation involve:
   1. Similar responses and similar stimuli.
   2. Similar responses but different stimuli.
   3. Similar stimuli but different responses.
   4. Different responses and different stimuli.

15. Most forgetting is caused by:
   1. Disuse.
   2. Lack of motivation.
   3. Retroactive inhibition.
   4. Inefficient original learning.

16. Which of the following correlation coefficients indicates the highest degree of relationship between two tests?
    1. +.25
    2. -.30
    3. -.40
    4. +.36

17. Which of the following is absolutely essential if one wishes to check the empirical validity of a test?
    1. over 100 subjects.
    2. a large number of items.
    3. a criterion.
    4. a reliability coefficient.

18. What is the mean of a set of T scores?
    1. 0 2. 50 3. 100 4. 500

19. It is often important to secure local norms for a standardized test because:
    1. National norms may not be representative of the local population.
    2. Local norms are more reliable.
    3. The local sample is more heterogeneous.
    4. National norms are not as precise.

20. In the absence of any other information, the test score least subject to meaningful interpretation is:
    1. The CEEB centile score.
    2. The standard score.
    3. The T-score.
    4. The raw score.

21. Reliability is a measure of the extent to which a test:
    1. Measures anything consistently.
    2. Is balanced with verbal and performance items.
    3. Predicts performance in some other area.
    4. Measures what it is being used to measure.

22. Psychologist X constructed a new intelligence test. He administered it twice to the same group of people with a two week interval between testings. He is most likely attempting to establish the test's:
    1. objectivity
    2. standards
    3. norms
    4. reliability

23. If a vocabulary test is used to predict probable grades in Freshman English, it would be used as:
    1. An achievement test
    2. An aptitude test
    3. A power test
    4. A discriminating test

24. General intelligence tests are purported to handicap children from impoverished environments because such tests:
    1. Are too abstract in content.
    2. Require mathematical ability.
    3. Are too culture-free.
    4. Emphasize verbal ability.

25. If we accept the assumption of the "constancy of the I.Q.", a six year old child with an I.Q. of 50 will have a mental age of six years by the time he is:
    1. nine years old
    2. ten years old
    3. twelve years old
    4. fifteen years old

26. The evidence on the relationship between physical development and social development of adolescents indicates:
    1. early physical development is a social asset for both boys and girls.
    2. early physical development is a social asset for boys but not for girls.
    3. early physical development is a social asset for girls but not for boys.
    4. late physical development is a social asset for both boys and girls.

27. Boys raised away from fathers as compared with those raised with their fathers are most commonly found to be:
    1. less masculine.
    2. more masculine.
    3. later in the development of masculinity, but highly masculine as adults.
    4. considerably less well adjusted.

28. I.Q. scores for rural and urban children when large groups of children are compared show:
    1. no difference between the two groups
    2. higher I.Q. for rural children
    3. higher I.Q. for urban children
    4. no difference between the groups on verbal items, but higher scores for the rural children on the performance items

29. Which of the following is <u>not</u> a characteristic of adolescence in all societies?
    1. development of secondary sexual characteristics
    2. accelerated physical growth
    3. conflict between dependence and independence
    4. transition from childhood to adulthood

30. The research evidence relating to the development of racial prejudice indicates that young children acquire the majority of their racial prejudices from:
    1. direct social contact with other races.
    2. social contact with prejudiced adults.
    3. social contact with other children.
    4. newspapers, television and radio.

Part B

31. You have planned a unit of instruction in your subject area which is directed to the "typical" student of that grade level. Your unit includes objectives, materials, general methods, and evaluation devices. When you meet the group you find that approximately one-quarter of the class cannot read sufficiently well to gain much information from the books you have selected, and that a number of students don't have the background knowledge that you had assumed as a prerequisite. What should you do?
    1. Select another set of books well within the reading level of all of the students and "tone down" the unit so all of the class will be successful at the beginning.
    2. Proceed with the unit as planned. It is reasonable to assume that in any class there will be a number of students who will not meet the expected levels of performance.
    3. Allow those members of the class who can read well and who possess the necessary background knowledge to proceed with the unit, and select other materials for those who can't read well and attempt to fill in the gaps in their knowledge.
    4. Assign the students who can't read well and who don't have the necessary background knowledge to study independently outside of class until they can catch up with the group, and proceed as planned with most of the class.

32. A seven year old boy from an impoverished environment does not possess the readiness skills necessary for beginning formal reading instruction. Evidence indicates that the youngster is of average intelligence for his age. Which of the following general approaches would be most likely to insure that this boy will learn to read successfully?
    1. Delay reading instruction as long as necessary for the youngster to mature to the level necessary for reading.
    2. Begin instruction at this time. Even though he does not possess the necessary readiness skills, these will be acquired through normal reading instruction.
    3. Identify those specific readiness deficiencies, and provide learning experiences designed to develop those readiness skills. When they have been developed, then begin formal reading instruction.
    4. Begin reading instruction at this time. When the youngster begins to have considerable difficulty, begin remedial instruction designed to develop the specific weakness.

33. Charlie is a fifth grade boy who although well above average for his class in ability almost never performs well enough in his school work to receive any recognition for academic performance. He frequently "horses around" in class, which is usually followed by a mild reprimand from the teacher and considerable attention from his classmates. Which of the following general approaches by the teacher is most likely to result in a decrease in Charlie's undesirable behavior and an increase in his academic performance.
    1. The teacher should punish more severely Charlie's horsing around and introduce some rather severe penalties for not performing acceptably in his school work, since Charlie is obviously capable of better work.
    2. Teacher should ignore as far as possible Charlie's misbehavior while attempting to control the class reaction to it, and give him increased attention for any reasonably good academic work he does.
    3. When Charlie is out of the room talk to the other children pointing out Charlie's problem and enlisting their support in no longer paying attention to him. If he is ignored long enough he will likely change his pattern of behavior.
    4. Have a talk with Charlie's parents encouraging them to be more strict with him and ask them if they will see to it that Charlie pays more attention to his school work.

34. If you are concerned with teaching such that the skills and concepts learned in school have a high likelihood of being useful to the learner in out of school situations, which of the following approaches should be emphasized in your teaching?
    1. Provide considerable reinforcement and distributed practice sessions over a long period of time.
    2. Provide for considerable overlearning and emphasize the applications of the concepts and skills.
    3. Establish long-range purposes for the learning and develop problem solving skills.
    4. Select material that is easy for the learners and which is enjoyable to learn.

35. Which of the following conditions is most important especially at the initial stages of a new learning activity if learning is to proceed with maximum efficiency?
    1. The learner's initial experiences with the new learning situation should lead to success.
    2. The child should understand the long-range purposes of the learning activity.
    3. The teacher should be careful in assessing the needs of the child and meet these needs through the learning experience.
    4. The child should be presented with problem situations sufficiently difficult so that he will not receive positive feedback on more than half of his learning trials.

36. As an elementary school teacher planning a reading instruction lesson for a group of first graders, which of the following kinds of information would be of greatest value in helping to plan an effective learning experience?
    1. The intelligence of the children.
    2. The children's attitudes toward books and reading and an indication of the reading habits of the child's family.
    3. The level of reading readiness skills such as auditory and visual discrimination skills.
    4. The broad experience background of the children, including such factors as: places visited, trips taken, stories remembered.

37. When teaching skills and concepts which are not likely to have any applicability to the learner's out of school life until a considerable time after leaving your class, which of the following general approaches would be most likely to insure that these skills and concepts will be retained until they become useful?
    1. Emphasize the possible applicability in order to make the learning as meaningful as possible. and do not be concerned that the learning at this point is to a very high level since when these skills and concepts are needed they can be relearned very easily.
    2. Emphasize learning of the concepts and skills to a very nigh degree, since retention of this type of material is determined mainly by degree of original learning.
    3. Provide only occasional feedback to the learner while developing these concepts and skills so that extinction will be very slow.
    4. Emphasize the techniques for relearning these skills and concepts and do not emphasize the actual learning of the concepts and skills themselves since they would undoubtedly be forgotten and will have to be relearned at a later date.

38. Which of the following procedures should the teacher follow in reviewing previously learned material in order to maximize pupil retention of this material?
    1. Review shortly after the material is learned and again after increasingly longer intervals of time have passed.
    2. Review immediately after the material is learned and again at equal intervals of time.
    3. Delay review until shortly before time of examination.
    4. Review approximately half-way between initial learning and examination.

39. Which of the following kinds of information is likely to be of greatest importance to the teacher in planning a learning experience for a child which offers him the greatest probability of success?
    1. The child's intelligence.
    2. The family background factors such as cultural level, experiences.
    3. The child's level of achievement with respect to the subject under consideration.
    4. The child's emotional level under different kinds of stress situations.

40. After having learned a long list of dates of important historical events, a student engages in one of the following activities. Which activity is most likely to contribute forgetting of the dates?
    1. Learning more different dates.
    2. Practicing on the Piano.
    3. Learning chemical formulas.
    4. Writing an historical essay.

41. If a parent or teacher sometimes gives in to the temper tantrums of a child and sometimes remains firm or even mildly punishes the child, which is the most likely effect on the temper tantrums.
    1. They will be eliminated quite rapidly.
    2. They will persist but at a lesser degree.
    3. They will persist and will be difficult to eliminate.
    4. They will gradually be eliminated.

42. Under conditions where the skills and concepts which the child learns in school are very different from the tasks which he encounters in later life, what transfer effects can be expected?
    1. A moderate amount of positive transfer as a function of the mental training received in practicing the problems in school.
    2. Probably negative transfer, because of the response difference factor.
    3. Likely zero transfer will result from this relationship between school learning and later problem situations.
    4. A great deal of transfer because of high motivation.

43. Which of the following conditions should prevail at the initial stages of a new learning activity if learning is to proceed with maximum efficiency?
    1. The child should understand the long-range implication of his behavior.
    2. Initial trials should lead to success.
    3. The teacher should be friendly.
    4. The child's needs should be met.

44. What will be the general effect of overlearning of fundamental skills and concepts in school upon later retention and transfer?
    1. It will increase retention, but have little effect on transfer.
    2. It will increase positive transfer, but not affect retention.
    3. It will increase both retention and positive transfer.
    4. It will have little if any effect on either transfer or retention.

45. As a teacher you are conducting a question-answer session with your class. Which of the following general approaches is most likely to keep most of the class actively involved and attempting to answer the questions you are raising?
    1. Select the brightest children and ask most of the questions of them.
    2. Ask questions of children when you are quite sure that they know the answers and comment favorably whenever possible. Select more difficult questions for brighter children and easier questions for less bright children.
    3. Allow the first child who raises his hand to answer each question.
    4. Whenever a child appears not to be paying attention, ask him a question to bring him back with the group, even though he is not likely to know the answer.

46. Punishment of a child for not getting his homework in on time by depriving him of privileges or by giving him low marks is likely to have which of the following effects on his behavior?
    1. It will make him more conscientious in getting his work in for your class and for other classes as well.
    2. It will probably cause him to get his work in to your class, but will not change his behavior with respect to other classes.
    3. It will not affect his behavior with respect to your class, except to make him dislike the course.
    4. It will decrease his attention to getting work in to your class.

47. When a teacher frequently comments on a child's misbehavior and tends to ignore him when he is behaving in an acceptable fashion what is likely to be the effect on the child's behavior?
    1. The child is likely to start behaving in an acceptable fashion so that the teacher will notice him.
    2. The child is likely to increase the frequency of his misbehavior.
    3. He will gradually misbehave less frequently and learn from observing other children who are getting more attention from the teacher.
    4. He will likely show no change in his behavior.

48. If we are concerned with developing skills and concepts which will continue to be used by the learner in out-of-school situations, which of the following kinds of reinforcement conditions should be emphasized?
    1. Satisfaction gained from knowing new things and from acquiring new skills which are meaningful and social attention.
    2. Punishment for not performing adequately.
    3. Good grades for good work and poor grades for poor work, in addition to social recognition for good performance.
    4. Extrinsic reinforcers such as gold stars, special privileges, and prizes for good work.

49. When students who learn more slowly than their peers are allowed more time and practice until they reach the same degree of learning as their faster classmates, what is likely to be the effect on immediate retention?
    1. The faster learners will retain more than the slower.
    2. The slower students will retain more than the faster.
    3. There will be no difference in retention.
    4. It is impossible to predict, since retention depends on other factors than those mentioned.

50. From the standpoint of the basic purpose for which the school exists, objectives and learning activities should be determined on the basis of:
    1. interest and motivation of the students.
    2. expected transfer value.
    3. factors which generally strengthen the mind of the child.
    4. the content which appears most frequently in textbooks and standardized exams.

51. Paul is an attractive, active 14-year-old eighth grader who is considered by teachers a poor student and a discipline problem. However, though he is a "D" student, he performed at the 99th percentile on recently administered standardized scholastic aptitude and academic achievement tests. We can conclude that Paul:
    1. is emotionally disturbed and should be referred to the school psychologist for immediate help.
    2. probably cheated on the tests because his test and his classroom performances should be similar.
    3. is evaluated according to different criteria by the tests than by his teachers.
    4. probably is not motivated to achieve in common school subjects.

52. Mr. Johnson must evaluate how skillful his high school chemistry students are in using laboratory equipment. The most appropriate evaluation technique would be:
    1. A performance test.
    2. A multiple choice test requiring identifications of the laboratory equipment and its functions.
    3. An essay test, requiring a description of the proper use of selected instruments.
    4. An anecdotal record.

53. Mrs. Harrison wishes to assess how well she has succeeded in achieving the objectives of her special 6th grade unit on the Civil War. What should she do?
    1. Use the Civil War part of a standardized achievement test of American History.
    2. Assign an essay that requires her students to tell all they know about the Civil War.
    3. Use an objective test that she develops to represent her instructional objectives.
    4. Ask her supervisor to examine her class orally on the Civil War.

54. Sally has an I.Q. of 100 on a group test of intelligence that has a standard error of 5 points. She has a centile rank of 45 on a standardized achievement test for her grade; we can conclude that Sally is:
    1. not achieving as well as she should.
    2. achieving at an expected and reasonable level.
    3. an "underachiever" who needs to be motivated for school work.
    4. an "overachiever" whose performances capitalize on chance factors.

55. Miss Smith wants to assess the general educational development of her 6th grade class at the beginning of the school year. What should she do?
    1. Assign a comprehensive essay examination covering basic school subjects.
    2. Construct a multiple-choice test incorporating the objectives of her 6th grade curriculum.
    3. Review the records of the 5th grade teacher who had the group last year.
    4. Administer a standardized achievement test appropriate for her students and the objectives of her district's curriculum.

56. Sam scored at the 42 percentile on an examination. The distribution of this test is normal, with a mean of 58 and a standard deviation of 8. What percentages of the standardization sample obtained scores equal to or higher than Sam's score?
    1. 16
    2. 42
    3. 48
    4. 58

57. Teacher X constructed a final examination with the intention of measuring student's achievement in his courses. Analysis of test results revealed that the objective final examination correlated very poorly with the past performance of students on six previous objective tests but correlated very highly with their intelligence scores. What can we conclude about this examination?
    1. It is probably unreliable as a measure of achievement.
    2. It probably has very high validity.
    3. It is probably invalid as a measure of achievement.
    4. It proves the previous tests to have been invalid.

58. The efficiency of pupil learning can be ascertained best when:
    1. The same statement of objectives is accepted by the school and the community.
    2. There is agreement among school people concerning desired objectives.
    3. The pupils know what is expected of them.
    4. The objectives are stated in behavioral terms.

59. Mary made a score of 80 on a test which had a mean of 60 and an S.D. of 15. On a second test, which had a mean of 60 and an S.D. of 6, she achieved a score of 72. On which test did she do better?
    1. She did better on the second test.
    2. She did equally well on both tests.
    3. She did better on the first test.
    4. More information is needed for interpretation.

60. It has been found that some women report the same age in repeated surveys separated by several years. In these cases, reported age as a measure of actual age is:
    1. relevant but unreliable.
    2. reliable but not relevant.
    3. unreliable and irrelevant.
    4. valid but biased.

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15. ABSTRACT *(250 words max.)*

Three groups of students participated in a highly structured program of independent study in the psychological foundations of education. One group was assigned, a second volunteered, and a third participated in a seminar designed to facilitate transfer following completion of the program. Conventional class students served as controls.

A comparison was made of the effectiveness and efficiency of independent study with conventional class instruction, and an attempt was made to identify correlates of success in each program.

No significant differences in grades received or in scores on tests of retention and transfer were revealed among any of the groups. Independent study was judged by students to be more efficient than class instruction, but less valuable as a learning experience. Independent study resulted in less instructional efficiency than conventional classes; however, subsequent years should reveal more efficiency through independent study.

Significant correlations were obtained between pre-test scores and college entrance scores and performance in independent study and conventional classes. However, differential prediction of success in the two programs was not possible.

16. RETRIEVAL TERMS *(Continue on reverse)*

Independent study in psychological foundations of education.

Groups assigned, volunteering, and with special seminar

Highly structured study guides

Tests of retention and transfer

Correlates of success

No differences in achievement

More efficiency, but less value than classes

Significant correlations of predictor variables with achievement.

17. IDENTIFIERS

Independent Study

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16. RETRIEVAL TERMS *(Continued)*

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APPENDIX D

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Intercorrelations of Predictors and Criteria

Total I-S students above the diagonal, N = 92; total conventional class students below the diagonal, N = 66

				Correlation												
				1	2	3	4	5	6	7	8	9	10	11	12	13
Pre-test		1	Personality Adjustment		69	78	62	47	31	29	34	41	28	41	05	36
		2	Learning	53		64	69	26	21	31	37	41	37	26	06	33
		3	Child Development	51	64		37	26	38	16	24	34	16	29	-18	21
		4	Evaluation	25	42	46		34	24	44	41	48	52	40	18	49
Wash. Pre-Coll.		5	Reading Comprehension	22	21	33	21		38	55	41	50	28	25	04	33
		6	Vocabulary	37	28	42	08	37		20	38	53	29	39	17	37
		7	Quantative	07	08	05	20	25	13		55	57	27	22	16	33
		8	Education GPA	37	30	04	01	29	26	21		93	36	44	29	53
		9	All College GPA	46	45	29	16	44	48	39	84		41	47	29	56
Course Grade		10	Learning	31	50	38	38	20	13	20	35	52		27	51	74
		11	Child Development	28	21	20	39	05	04	10	32	32	53		30	68
		12	Evaluation	13	22	21	20	-12	10	10	22	29	29	34		71
		13	Total Ed. Psych. GPA	33	39	39	46	07	14	14	36	49	77	78	65	